AIRFIX magazine

FOR PLASTIC MODELLERS

JUNE 1972

15p

MONTHLY

IN THIS ISSUE

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Modelling the Yak fighter family

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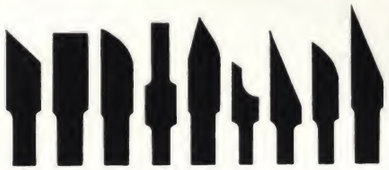

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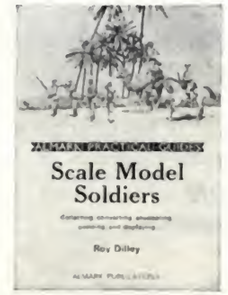

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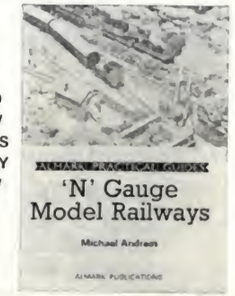

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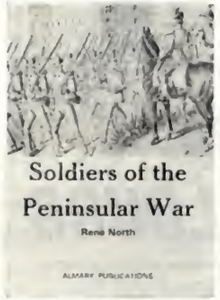

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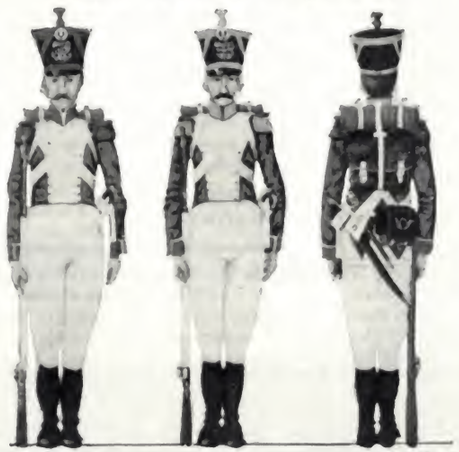

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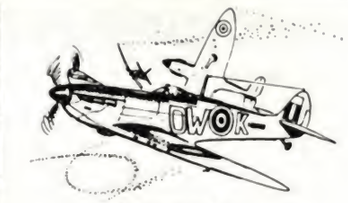

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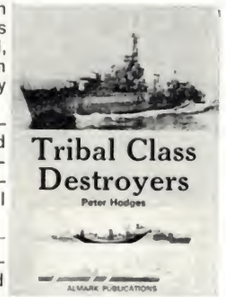

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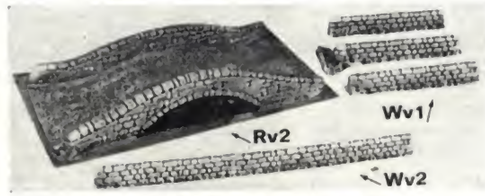

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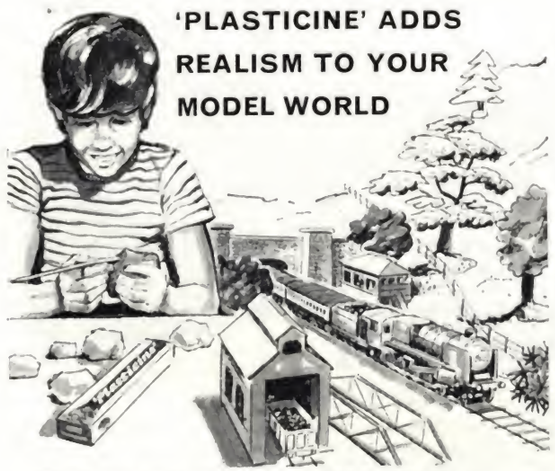

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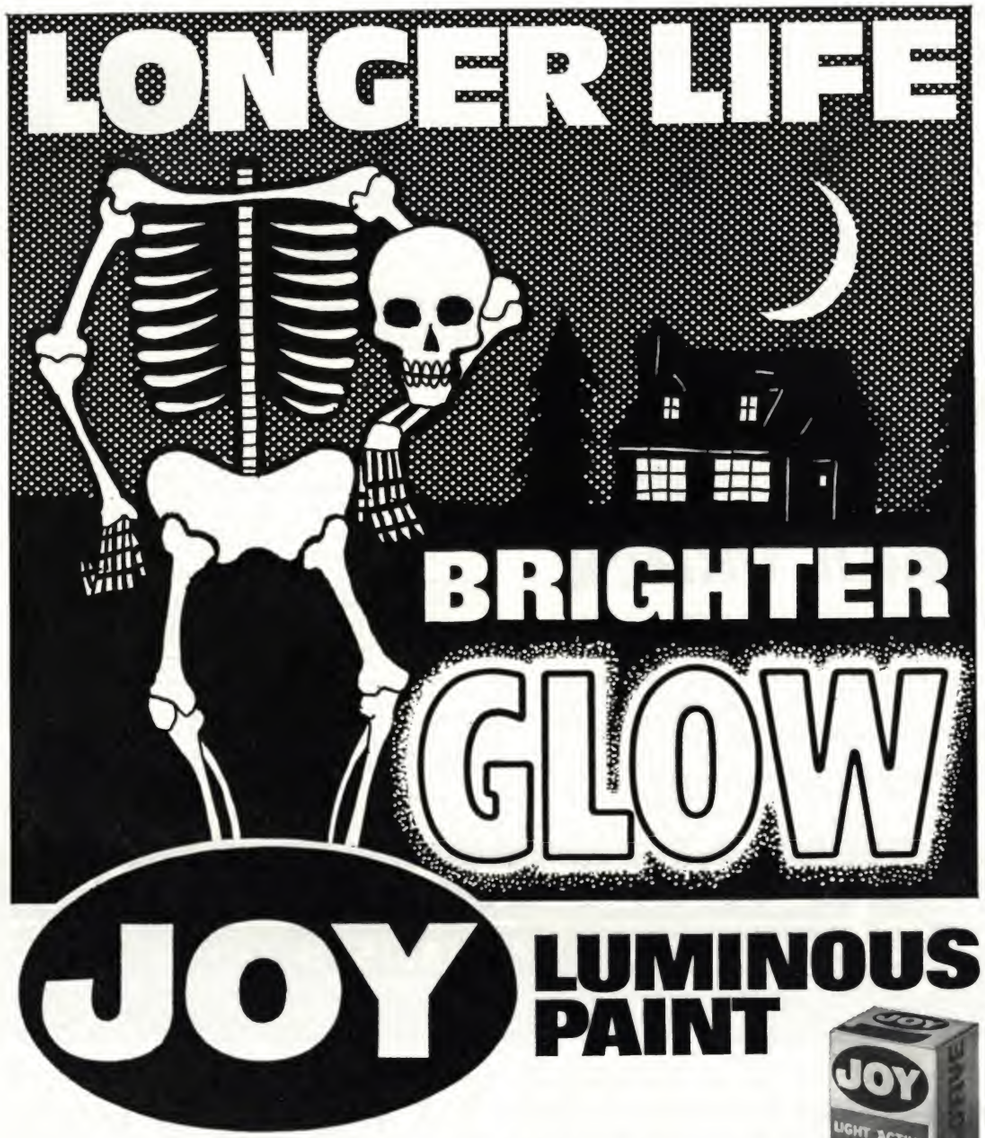

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AIRFIX magazine
FOR PLASTIC MODELLERS

June 1972

Volume 13 No 10

Editor: Chris Ellis

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Cover Picture

This charming little Baldwin 0-6-0ST will be a familiar shape to those who have seen or operated the HO scale Minitrains narrow gauge model. The Baldwin company, of Philadelphia, build hundreds of these narrow gauge 'lokeys' in a range of sizes and gauges. The Minitrains model represents an 0-4-0 version while the example shown is an 0-6-0 with longer boiler. The picture suggests a simple idea for modelling the 0-6-0 version using the Minitrains body, Airfix 'Pug' parts, and an 0-6-0 N. gauge loco chassis. The tender for oil, coal, or wood was a typical addition used with many of these engines while the pilot steps and headlamp are characteristics of American railway practice. This locomotive, now in retirement, is Works No 43718 and was used by the Paramonga Sugar and Paper Works, Peru.
(Photograph by Dennis W. Robinson)

Next publication date:
June 23, 1972

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CONDOR

FROM A CHIPMUNK

BY ALAN C.M.LAIRD

Above: *The Condor makes a most attractive model, especially if painted in one of the bright colour schemes illustrated here. G-ARVZ is bright yellow with red trim and blank white disc on tail for a racing number. This picture shows how half-tone pictures can mislead. Ortho film used here renders the yellow darker than the red trim. This occurs quite often on pictures of pre-1950 vintage when ortho film was more widely used.*

ROLLASON Aircraft & Engines Ltd initiated production of the Condor in 1962 as a two-seat follow-up to the successful Turbulent ultra-light. The Condor was originally developed from the D31 Turbulent by its designer Roger Druine, although the final product now bears little resemblance to its single-seat ancestor. Indeed, development is still continuing, changes being frequently made to ease production.

The first D62 Condor, G-ARHZ, originally had a Continental A85 engine, but was later fitted with a 90 hp C90. The next two were D62As with the 100 hp Continental 0-200-A. Since then, more than 40 have been produced, with a redesigned cowling, a few without flaps, some with straight sloping windscreen, and the original flat-topped roof replaced by a streamlined plywood one for aesthetic reasons. Combine this with the different fin and rudder paint schemes introduced to differentiate between aircraft in the circuit and it will be seen that very few Condors are identical, so care should be taken when modelling this aircraft to ensure accuracy in this respect.

Not as difficult a modelling project as first appearances suggest, any modeller of average skill could complete this satisfactorily. However, some experience is necessary, and for this reason I will not go into great detail on construction methods.

Wings, wheels and prop blades come from the Airfix Chipmunk kit, the rest of the model is scratch-built. Once the wings are cut as shown in the diagram, all surface detail has to be removed, the aileron and flap lines filled and the new lines scribed on. At this stage the holes for the landing light housings should be cut (or these can be painted on at final finishing).

Cut the six parts for construction of the fuselage from 20 thou plastic card, plus the two bulkheads required. Chamfer the joining edges to 45° on the inside to obtain a flush fit. Join the sides to the rear floor, the extreme ends of the fuselage sides are cemented together. Bulkhead B1 forms the rear wall of the cabin and this is glued in now, the front ends of the fuselage are pulled inwards and bulkhead B2 is cemented there, the forward floor now being glued on. The front and rear fuselage tops are bent to shape and cemented in position. Glue on the wings, ensuring the correct angle, and allow to dry. When dry, file flat the join of the two wings so that it becomes flush with the base of the fuselage.

The engine has to be manufactured from balsa, Brummer Stopping or similar material (I used Plastone). The canopy could be moulded in one piece, or by moulding the roof and windscreen, the rest can be constructed from bent acetate sheet. Before the canopy is glued on, add all interior detail. Make the tail unit from 30 thou card. Lastly, make the main undercarriage legs and glue these in position under the wings, this will be an aid during painting.

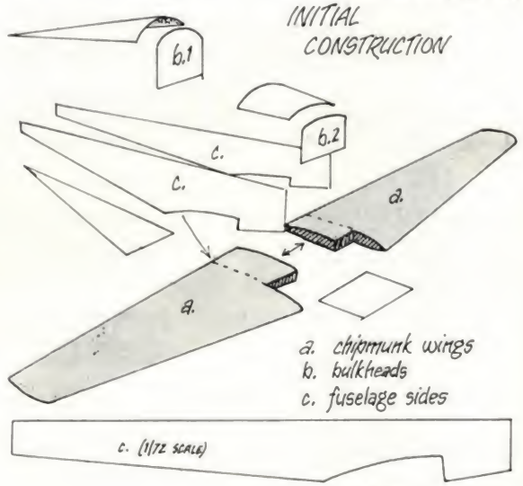
Painting is best done at this stage so that masking can be done unobstructed. Paint the whole model Humbrol gloss yellow and when dry mask the wing and tailplane leading edges, and front fuselage, in preparation for painting Humbrol gloss Midnight blue. The fuselage cheat line and other dark blue trim was cut from dark blue transfer sheet, registration letters came from Letraset instant lettering sheets which, although black, are completely acceptable against the dark blue.

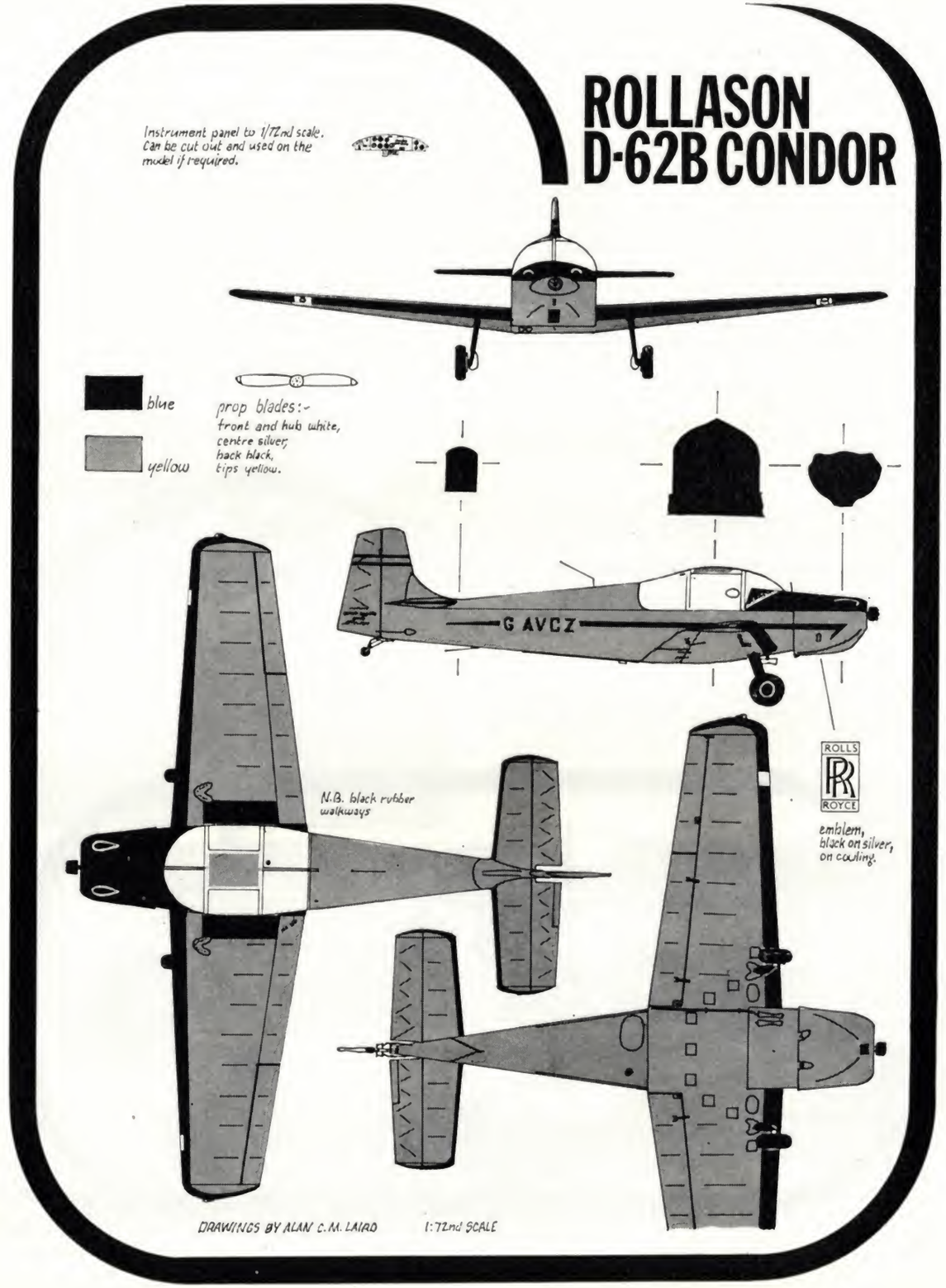
The prop blades are re-shaped from the Chipmunk's. Cut the hub from a piece of circular sprue or scrap.

Finally, add all surface detail and complete the undercarriage.

Continued on page 540

Below: *Two views of G-AVCZ in model form, the aircraft drawn opposite. In these pictures the yellow shows correctly as a lighter tone, achieved when modern panchromatic film is used. This conversion is an excellent addition to the as yet limited range of light civil types in model form.*





Condor—continued

COLOURS (below):

1: D62A. Note early style cowling and flat cabin roof. Aircraft overall yellow with dark blue trim. Tiger club emblem below cabin door.

2: G-AXGS is fitted with a fuel tank in the fairing under the fuselage. Note clipped wing tips fitted with end plates. This aircraft was entered in the England-Australia race but did not qualify. Standard colour scheme, black '65' in white circle. Tiger club emblem under cabin door. Red spinner.

3: Standard D62B G-AWFO. White rudder with black circle.

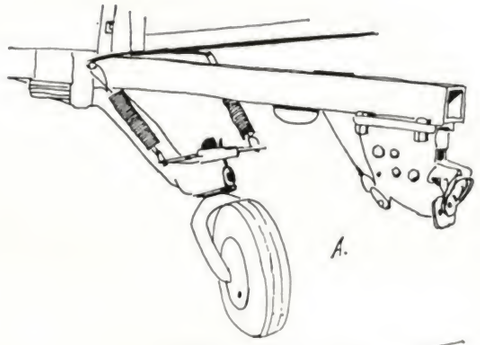
4: D62B G-AVKM standard scheme. Black competition number on white circle.

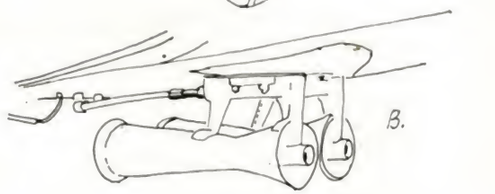
5: D62B G-AWSR. Standard scheme. 130 hp 'Super Condor' fitted for glider towing. Clipped wings and red spinner as G-AXGS.

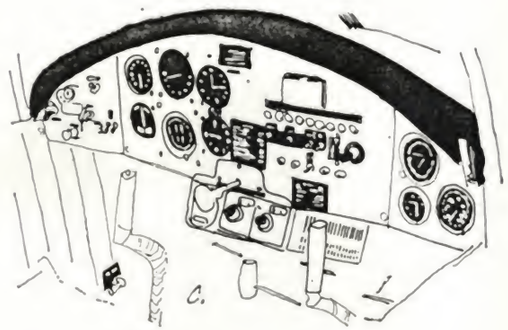
A: Glider-towing hook. Note that tail-wheel is mounted on this.

B: Ventura mounted under the fuselage.

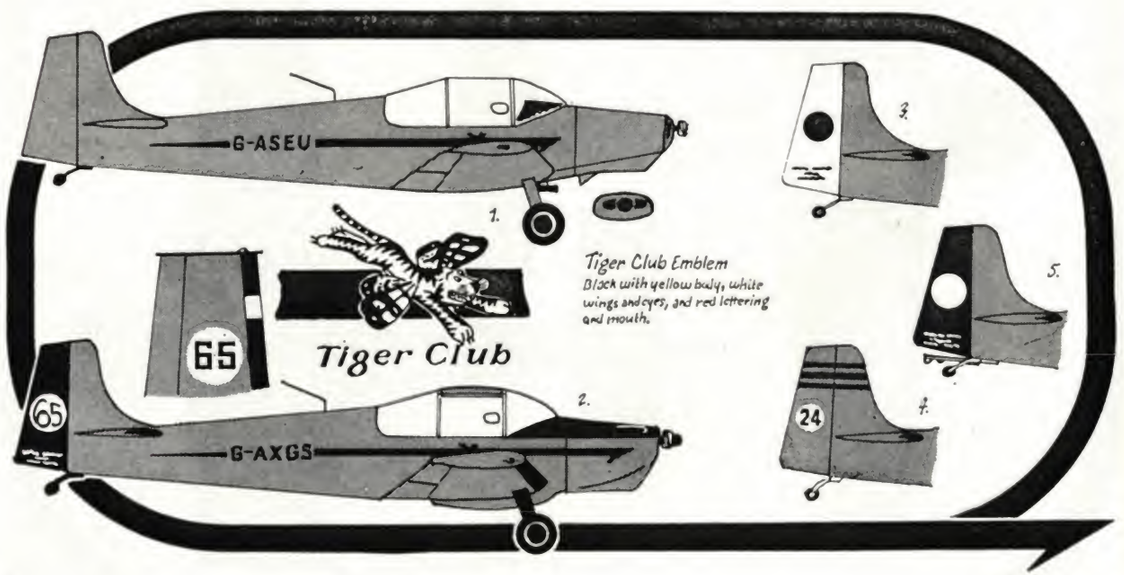
C: Instrument panel. Panel is either black or grey.







D62A Condor. This originally had the cowling as shown in the drawings of G-ASEU but is now fitted with the standard production cowling. Note absence of bulges.



photoPAGE

More rare pictures from readers with captions by **Michael J. F. Bowyer.** A free Airfix kit is awarded for every picture published, but please note that there is usually a delay of some months before publication due to the limited space at our disposal.

All this month's pictures come from one reader, J. R. Young, and date from the 1938-41 period in the Middle East. They are from the collection of D. W. Lamplaugh. **Above:** Line up of aircraft and personnel at RAF Heliopolis in early 1938 with 208 Sqn Audax in foreground (note perforated cowlings on some machines), 216 Sqn Valentias, and Fairey Gordons of the Station Communications Flight. Leading the parade is Group Captain Collishaw.

Above: Damaged Valentias of 216 Sqn after a hangar fire, late 1939. The camouflage is sand and dark earth approximating to the official colours and made from locally purchased hot distemper. Colour extends under fuselage but other undersides remained doped silver. **Left:** A natural finish DC-2 believed to be at Khartoum in 1939. It is in RAF roundels and has a serial ('276' is readable) painted on top of wings but not apparently elsewhere. Can anyone identify further? **Below:** B Flight Valentia being bombed up—note rough application of camouflage and squadron badge on nose. **Below left:** Two Valentias in late 1938 after an accident. Aircraft are silver doped with red/blue upper wing and fuselage roundels, dark grey codes and black serials. Red/white/blue roundels under wing.

Left: A camouflaged Bristol Bombay of 117 Sqn at Khartoum early in 1941. It was badly damaged in a storm while standing in the open awaiting an engine change. Coded P in light grey it appears to be in dark earth/middle stone with light (possibly Sky) undersides. Serial not known. A type roundels on fuselage.

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The author, a well-known contributor to *Airfix Magazine*, details the development and changes in camouflage and markings of Royal Air Force fighter types from 1937-1969, and lists the serial number allocations of every RAF fighter ever flown in that period. There are 139 individual drawings which depict specific aircraft in typical markings of the period. 192 pp, 8½″×5½″, 157 photographs, case bound.
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Edited by Chris Ellis
Editor of *Airfix Magazine*

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By Archibald Williams

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This, the ninth edition of an excellent reference source for ship modellers, has been completely redesigned and revised. Contains classification and characteristics of all craft in the US Navy and Coast Guard as at September 1971. 293 pp, 10″×7″, 427 photos, 19 line drawings, paper bound. A United States Naval Institute Press book.
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Edited by W. H. Tantum IV and E. J. Hoffschmidt

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Leopard ARV

More conversions from the basic Airfix Leopard kit

By R. PAWLEY

THIS model makes a most interesting companion piece for the basic Leopard and Leopard AA tank described last month. Glue together parts 1, 2 and 3 of the Airfix Leopard kit, then cut part 4 as shown in the drawing. Don't forget the bend to level the rear decking. Next, glue this part and part 5. To complete this first stage, cut the slots in the front of part 3, as in the drawing, to accommodate the dozer blade.

Dozer blade

The base of Part 1 is a two-piece laminate made from two strips of 40 thou plastic card $\frac{1}{8} \times 1\frac{3}{8}$ inch; cut this to shape and glue to the blade, $1\frac{3}{8}$ inch wide, which should be cut from heat curved 20 thou plastic card. Curve this by binding round a suitable former and plunging into very hot water.

Part 2, dozer ram supports: Two are cut, shaped and drilled as drawn from 40 thou plastic card

Part 3, dozer ram: This is made from a piece of No 10 plastic knitting needle shaped and drilled as drawn.

Part 4 dozer pivot arms: Two are cut, shaped and drilled as drawn from 40 thou plastic card.

Part 5, pivot pin: This should be $\frac{15}{16}$ inch long from $\frac{1}{16}$ inch plastic rod. All pivot pins used in this conversion are from $\frac{1}{16}$ inch plastic rod, which is available from most big hobby stores. Glue parts 2 and 4 in exact positions as drawn. These parts have to move through cut-outs in the tank body. Pass the pivot pin through both parts 2 and the dozer ram.

Crew compartment

All parts are cut from 30 thou plastic card. Cut part 1 as drawn and bevel all three straight edges. Cut parts 2, 3 and 4, then parts 5 and 6; bevel the one long edge on each of them. Glue the 30 thou strips as drawn, 30 thou from the tops of parts 2 and 5 on the sides which will be inside to support the roof. Glue parts 2, 3 and 4 to part 1, making sure all parts match up. Part 5 is glued on at an angle and slanted away from the vertical, hence the bevel. Part 6 is then added to form a roofless crew compartment and, as no crew compartment should be roofless, cut part 7 and bevel three edges to fit. Cut part 8 and bevel all edges to fit, then glue parts 7 and 8 and, when dry, finish off with fine 'wet and dry' abrasive paper.

Hatches

The hatches can either be scribed on or drawn on, but I prefer to cut them from 5 thou plastic card, hinges are from plastic rod and the handles from Microstrip and plastic rod. The two large hatches on parts 2 are 4/10 inch square with rounded corners. Add hinges and handles to the hatches with tiny strips of plastic card. The main hatch on the roof is from a two-piece 40 thou laminated circle of plastic card bevelled all round and topped off with one of the Leopard kit's own hatches. Of the two other roof hatches, the rear one is the driving hatch from the Leopard kit, with the periscopes made from 30 thou plastic card. The driver's hatch is a two-piece 40 thou laminate of plastic card. Cut this laminate to the same shape as the Leopard driver's hatch and shape to side view as drawn; add periscopes from 30 thou card and glue in position.

The hatches on part 6 are straightforward as is the hatch on part 3. Above and between the hatches on part 2 a shelf is made from 20 thou card on which are glued six smoke dischargers direct from the Leopard kit. The headlights and mirrors also are used.

A ventilator is made from the piece of plastic sprue joining, the lights and mirrors from the Leopard kit. This vent is glued in the left-hand forward corner of part 8.

A machine gun left over from a Jagdtiger conversion is glued as in the photo above. This machine gun could easily be made from sprue and plastic rod. Spare pulley wheels and lifting gear can be made from content of spares box and plastic rod. Armtec accessories do some AFV tools which might be useful. For my conversion I cut out very carefully the spades and axes on part 4 of the Leopard kit and rubbed these down on 'wet and dry' abrasive paper till they were thin enough to use. These I glued on again to parts 2 and 3. Owing to this conversion there is an open space at the front of pieces 1 and 2 of the Airfix Leopard kit which needs filling in with 30 thou plastic card.

Crane

Begin by cutting out and drilling jib parts as drawn from 30 thou plastic card With sides cut to shape, lightly score at the dotted lines and bend to match the top shape. Glue sides to top and bottom. Pulley wheel is made from a piece of No 10 knitting needle with grooves cut round with a fine-toothed saw. Glue this in position. Then cut parts A, B, C and D from 40 thou plastic card, as drawn.

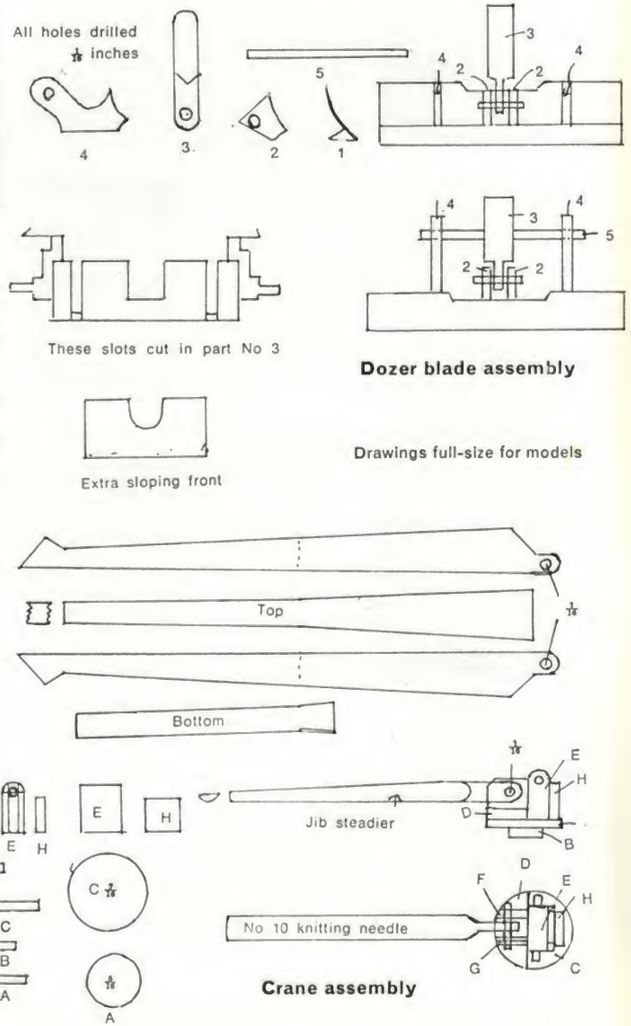
Cut and drill parts F and G from 40 thou card. Parts F and G are jib steadier brackets. Part E is a three-piece laminate of 40 thou plastic card shaped and drilled as drawn. Glue parts B, C, D, E, F, G and H together to form crane base. Put part A aside for later use. Fix the jib to part E with plastic rod pivot pin.

Jib steadier

The jib steadier is used so that the jib will stay in whatever position that it is put in—full—half or less raised. The jib steadier is made from a piece of plastic knitting needle No 10. With a

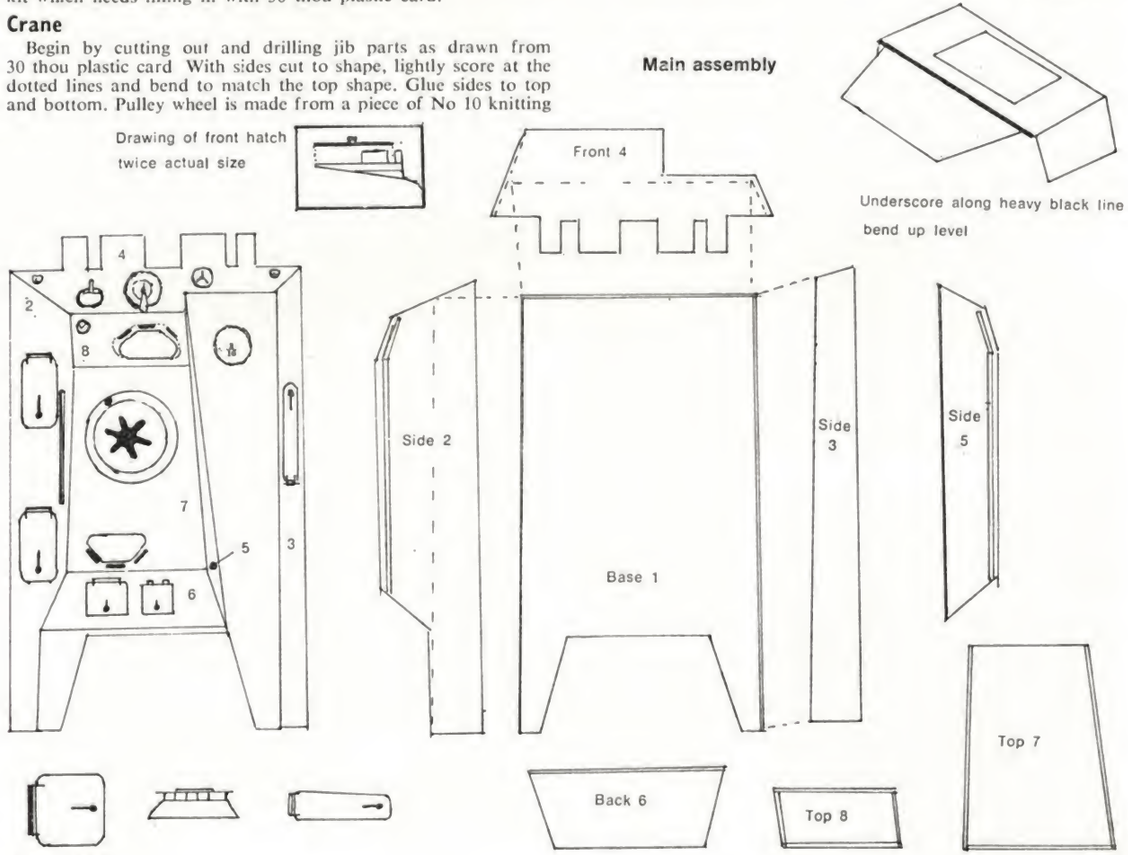
Continued on page 579

Above: *Leopard ARV about to service a Leopard AA tank, the subject of last month's article. Both vehicles are conversions from the same basic kit.*



Below: *Front view of the ARV showing new jib, dozer blade and hatches made from plastic card and various bits from the spares box.*

Above: *Side view showing jib stowage detail and new superstructure.*



BOOKS for modellers

Unless otherwise stated, books reviewed are normally available from your local bookshop or from hobby shops which sell books for enthusiasts, including the mail order stockists advertising in this magazine. As a last resort they can be obtained from the publishers whose addresses are given when known. In all cases of mail order, however, suitable postage should be added to the selling prices quoted.

MILITARY

Panzer-Grenadier Division Grossdeutschland.
Horst Scheibert.
£5.50.
Panzer in Russland.
Horst Scheibert and Ulrich Elfrath.
£5.00.
Die Deutsche Gebirgstruppe 1939-45.
Alex Buchner.
£5.00.
Fallschirmjäger 1939-45.
Rudolf Böhmler and Werner Haupt.
£5.25.
Distributed in Great Britain by W. E. Hersant Ltd, 228 Archway Road, Highgate, London N6.

THESE four books are documentary picture histories of some of the German forces used during the Second World War. Only two of the above books have any English translation (*Fallschirmjäger* and *Panzer in Russland*) and are rather stilted and uninformative; one would imagine that someone has done a word for word translation of the German text and not bothered to read it again afterwards, which makes for rather odd reading at times.

The photographs in all four books are of the 'troops in action' type of picture, some of them even recurring in more than one book, but all are of interest, either to the wargamer or enthusiast, as they show some unusual shots not seen before by the general reader in Britain, many of which give a wealth of ideas for diorama and markings work. If you have money to spend and a knowledge of German, the books are worth adding to your collection.

Oudenarde 1708.
Eversley Belfield.
Dettingen 1743.
Michael Orr.
90p each.
Uniforms of the Peninsular War.
Arthur Kipling.
Charles Knight & Co, 11-12 Bury Street, London EC3.
£1.50.

THE first two of these books are in the 'Battles for Wargamers' series and follow the format of the previous books. They have straightforward accounts of the battles in their titles, together with coverage of the associated campaigns. *Oudenarde* in particular includes coverage of tactics and equipments and organisation in special chapters. As we've said of earlier titles, however, there is little or nothing relating the actual events to wargaming other than a short introduction by Peter Young, the same in all books in the series.

The third title is similar in format to an earlier book on Malburian uniforms. There are a number of colour plates showing groups of figures, some line drawings, and a brief text describing the uniforms and other details. Coverage is not comprehensive by any means, but most of the major forces are dealt with and the book should be useful for wargamers and military figure converters.

The Encyclopedia of Military History from 3500 BC to the present.
R. E. Dupuy and T. N. Dupuy.
Macdonald and Company Ltd, 49 Poland Street, London W1.
£8.50.

THIS 'tome' should be of interest to any military modeller who has had the frustrating experience of looking for one piece of military information and having to go through dozens of different reference works before finding a tiny snippet of almost useless data. With this book the reader should have no such trouble, within its 1,000 or so pages it packs all the major military events from 3500 BC to 1965 in chronological order, with separate chapters on tactics, weapons and strategy for any particular era. Illustrated with diagrams, sketches and maps and having three indices, this essential book covers most of the basic military information any enthusiast will want to know.

Italian Fascist Daggers.
Frederick J. Stephens.
Militaria Publications Ltd, distributed by Swordsman Books, 92 High Street, Redbourn, Herts.
£1.50.

HERE is a subject which has, to the best of our knowledge, not been covered at all anywhere else. This soft cover book includes six colour plates. It is only 28 pages long but they are large size with excellent pictures and an authoritative text by an author who is well-known as a specialist in edged weapons. While the Italian fascists had nothing like the variety of edged weapons sported by the Nazis of the Third Reich, there were some interesting designs and weapons enthusiasts will find this a fascinating book.

A new book of interest to soldier fans is *America's Fighting Men, 1607-1864* (New York Graphic Society) which is to be distributed in Britain by Patrick Stephens Ltd from August 31 next. This is a lavish presentation set of 24 prints in a special case together with a book of essays about the subjects illustrated. The prints are in a distinctive caricature style but with very accurate uniform detail. This is a limited collectors' edition of only 1,000 signed and numbered copies, priced at £38.40 per set.

RAILWAYS

Steam in Camera, 1898-1959.
Edited by Patrick Russell.
£2.50.
Salute to the LMS.
Cecil J. Allen.
£1.10.
Continental Railway Handbook: West Germany.
W. J. K. Davies.
£1.20.
Ian Allan Ltd, Terminal House, Shepperton, Middx.

FIRST of these titles is a splendid and lavish album for the enthusiast whose interest centres on the great days of steam in Britain. It is a pictorial album compiled entirely from the collection of the late Ken Nunn, a veteran railway photographer who started photographing trains before the turn of the century. Coverage is wide and the early pictures in particular will be most useful to anyone modelling the old-time rail scene. There are a few shots of non-locomotive subjects as well. The book is litho printed and the reproduction is not as good as Ian Allan's best, but still very acceptable.

Salute to the LMS is in the board cover 'annual' style of presentation. It is a well-written, straightforward account of LMS history profusely illustrated with well selected pictures. For anyone modelling the LMS who wants background material, this is an excellent buy at its modest price.

The third book is new to us, though published some time ago as one of a series giving the background to various European railway systems. In pocket book size it clearly sets out a basic history of rail operations and then covers such subjects as major routes, operating patterns, types of locomotive and stock, and so on. For anyone running a model layout with the excellent Continental models of German stock now available, this is a 'must'.

Loco Profile 19: Gresley A4s.
Loco Profile 20: American 4-8-4.
Profile Publications, Coburg House, Sheet Street, Windsor.
40p each.

THESE two additions to the Loco Profiles series well maintain the excellent standards this fine series has established. We imagine that the book on the Gresley A4s should appeal to most readers and it is a most invaluable and inexpensive buy for anyone wishing to detail or otherwise work on any of the several A4 models available.

AVIATION

Spitfire Special.
Ted Hooton.
Ian Allan Ltd, Terminal House, Shepperton, Middx.
£1.50.

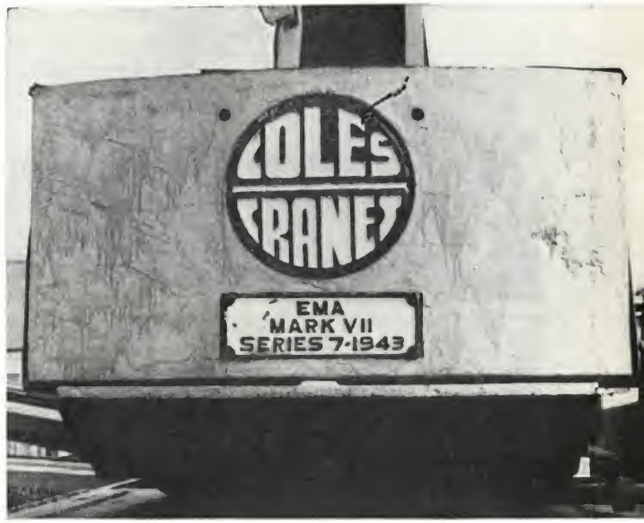
THOUGH there are plenty of other books about Spitfires, there never seems to be an end to the new material which most authors seem able to dig up. This book will please all Spitfire enthusiasts, being mainly a pictorial coverage

Continued on page 569

COLES CRANE IN CLOSE-UP

In our January 1972 issue, Gerald Scarborough gave details for making two versions of the Coles Mobile Crane in 1:76 scale. This is quite a complex subject and led to further queries. This picture series should be of value.

By David E. Jane



1

These two Coles cranes are mounted on AEC Matador chassis and are at present in the Tipton Road yard of Ashmores of Dudley Ltd. Colour schemes for the two vehicles are TNR 142H, chassis and cab: RAF blue; crane, generator, radiator and offside cab door: yellow. DMO 95C, complete vehicle: yellow. Both vehicles are to be overhauled and sold for further use, so I would suggest that here is a good chance to make an unusual lineside accessory using the close up views shown here, and Gerald Scarborough's original article. Military enthusiasts should find this useful also as it enables them to super detail their basic model. **Photo 1:** Detail of crane serial plate, identical on both cranes apart from paintings, DMO 95Cs being in natural metal, TNR 142H lettering being picked out in black and white.

2

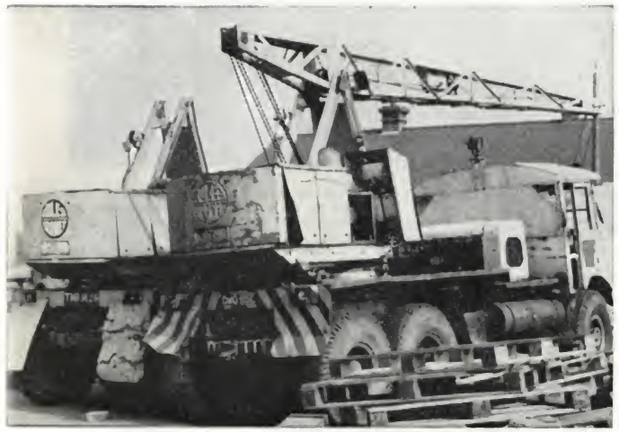


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Photo 2: General view of both cranes showing the effects of weather and hard usage. Note the hand spotlight mounted on the cab of DMO 95C and the small hooded tail lights. Also of interest are the triangular windows in the back of the cab for use when backing. **Photo 3:** Close up of crane jib showing ribbing and hinge detail. At the main hinge can be seen the small quadrant which indicates angle of jib elevation, as well as two of the main junction boxes supplying power to the winches.

4

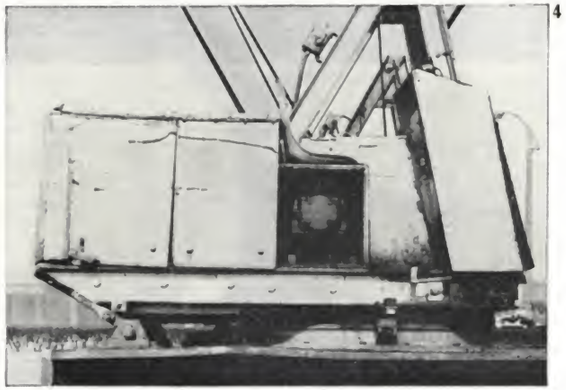

Photo 4: Dead side view of crane superstructure showing rivet detail and the travel retaining clamp which prevents the crane traversing while on the move. Visible under the operator's seat where an inspection panel has been removed is part of the winching mechanism. **Photo 5:** Close up of operator's controls, note the heavy staining on almost all working parts.

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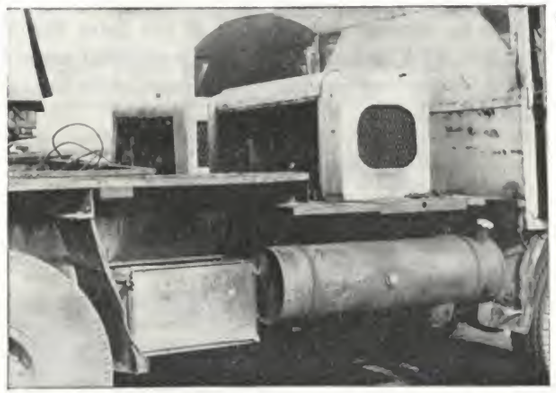

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Photo 6: General view of the two cranes, again note the shielded rear lights on DMO 95C. **Photo 7:** Close up of generator on TNR 142H. In the background can be seen the supports for the spotlight on DMO 95C. Note also the rod operated trafficator and metal stirrup to help the driver to enter the cab. **Photo 8:** Close up of crane body without jib showing heavy staining and buckled plates due to hard usage and weathering. **Photo 9:** General layout of generators and fuel tanks **Photo 10:** General view of crane front showing hook secured for travel, barred-in front of spotlight, battered mudguards and painted out service markings. **Photo 11:** Chassis rear showing tow bar, rear sheave stock, battered mudguard and locating points for rear road lights. **Photo 12:** Tow bar and radiator detail.

11

12

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Bottom left: World War I tank Bottom centre: Lee/Grant tank Top left: 88mm Gun Right: Centurion

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A simple water tower

HO/00 scale scratch-built wooden water tank suitable for any model rail layout

by Michael Andress

THIS is a model of one of several water tanks in the main yards at the Christchurch (New Zealand) railway station. It would be appropriate for a small branch line station, or as an extra watering point in the shunting yards of a large terminus. Though of New Zealand origin, it is typical of similar structures to be found on almost any railway in any country.

My model was constructed almost entirely of balsa wood. This is an easy material with which to work and gives a realistic finish for wooden structures. For painting, I use ordinary water-colour poster paints. These take well on balsa wood and card and can be given a weathered appearance easily. They will not cover cellulose adhesives so it is best to paint all the parts before assembly. I always do this anyway as it gives a much neater appearance, especially when there are small parts of a different colour to the rest of the model.

Begin construction with the tank itself. The sides and ends (shown full size in Fig 2) are cut from 1/32 inch balsa sheet with the grain as shown, and scribed to represent planking. Now cut the floor and false roof from $\frac{1}{8}$ inch sheet, scribing only the under surface of the floor (as the other surfaces are all hidden). Fit the ends, floor and false roof together as in Fig 3A and glue firmly. The sides are then fitted, overlapping at each end, and a vertical strip 1/32 inch by 3/32 inch added at each end of each side.

In the full-size tank the ends are strengthened by four steel rods which pass through the overhanging parts of the sides and through the vertical strips, to be secured by large nuts. In the model the rods are represented by 1/32 inch square strips rounded off and fitted between the sides; 3/64 inch square pieces of 1/32 inch thick balsa or card are cemented in position to simulate the nuts. These details are all shown in Fig 3B.

The upper trim boards (shown full size in Fig 2) are cut from 1/32 inch sheet wood and are fitted next. The end boards overlap those at the sides. A 3/32 inch square strip along the centre of the roof between the highest points of the two ends supports the middle of the roof. The roof plan is shown actual size in Fig 4. Allow 1/64 inch extra at the sides for the true roof size, as the roof is slightly curved. It is made from 1/32 inch balsa sheet scribed for planking. A strip of 1/32 inch square wood along the lower border of each side, and of 3/64 inch square wood along the bottom edge of each end, as in Fig 3C, completes the basic structure of the tank.

The main supporting beams, three in number, are shown in Fig 4. They are cut from $\frac{1}{16}$ inch sheet wood and are placed beneath the tank as shown in the plans and photograph. As the ends of the tank come down lower than the sides, it is necessary to fit a spacer strip 3/64 inch square across the centre of the undersurface of the floor so that the centre supporting beam will be at the same level as the two end beams.

We can now set the tank aside and turn our attention to the supporting framework. This may look a little complicated but can be built up easily in sections. First construct the three basic frames. These are built up from 3/32 inch square strip wood directly on the plan (Fig 5A). When the glue is dry, lift off the plan and add the two diagonal braces of 1/32 inch by 3/32 inch balsa strip (Fig 5B).

Now comes the only tricky part in the construction. The three frames must be held vertical in the correct position (Fig 6) while two diagonal braces are added at each end. This requires a little care to keep the whole structure square but is not really difficult. Fix the tank, resting on its supporting cross beams, on top of the framework and the model is complete except for the finishing details.

The inspection hatch on the roof is built up from 1/32 inch balsa as in Fig 4, with a slightly overhanging trapdoor of the same material. A pin head (cut off leaving a short length of the shaft to anchor it) can be used to represent the handle for opening the door.

The ladder is made from 1/32 inch square balsa stock. Cut two pieces longer than the length of the ladder and hold them in place on a plan of the ladder (Fig 7) by a pin through the excess strip at each end. The rungs can then be cut to length and glued in place. If the two long lengths are unduly mobile in the centre, a few pins at each side of them to hold them steady, will make the job easier.

The water release is built up from scrap balsa and a length of fine chain (see plans and photograph of model). The water inlet pipe (which is best added

Continued on page 568

Above: *Prototype water tower in the main yards of Christchurch railway station, New Zealand.* **Opposite page, bottom:** *View of completed model made from balsa wood.*

Fig 1

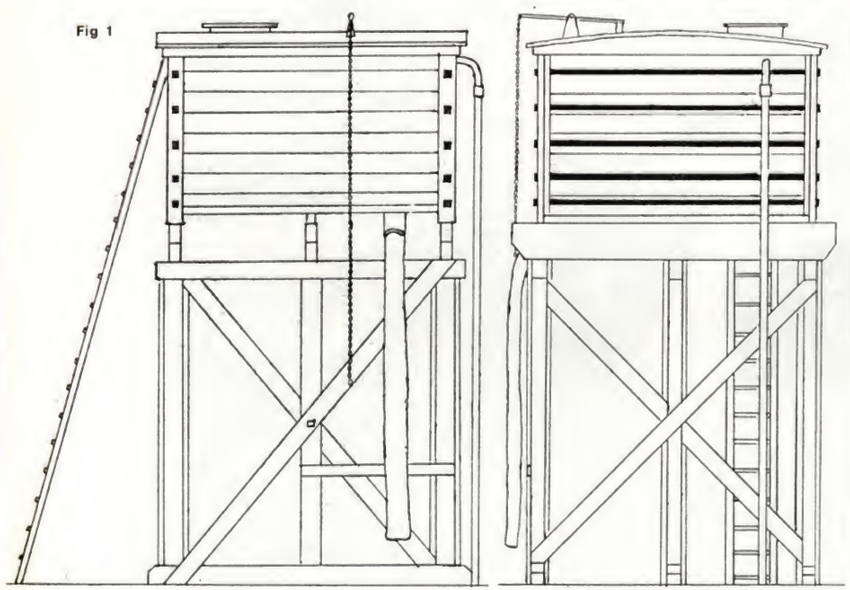
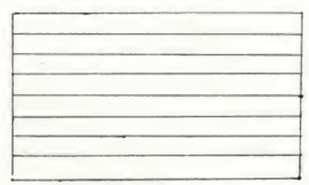
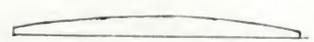


Fig 2 1/32 inch balsa sheet scored to represent planking. Grain should run from left to right.

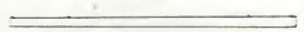
End piece—make two of these.



Side piece—make two of these.



Upper end trim boards (make two).



Upper side trim boards (make two). All drawings full-size.

Make two pieces this size from $\frac{1}{8}$ inch balsa sheet or plastic card to form floor and roof. Score underside of floor to represent planking.

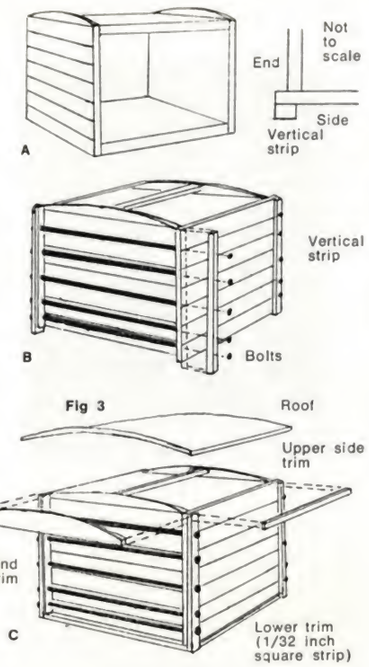
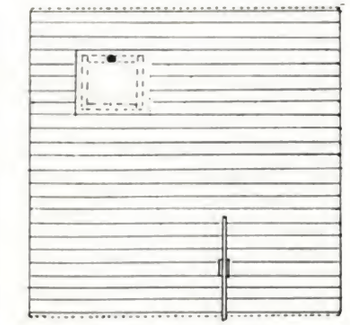
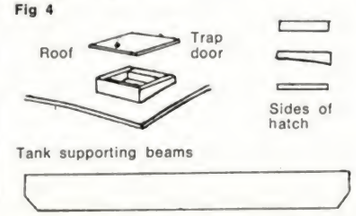


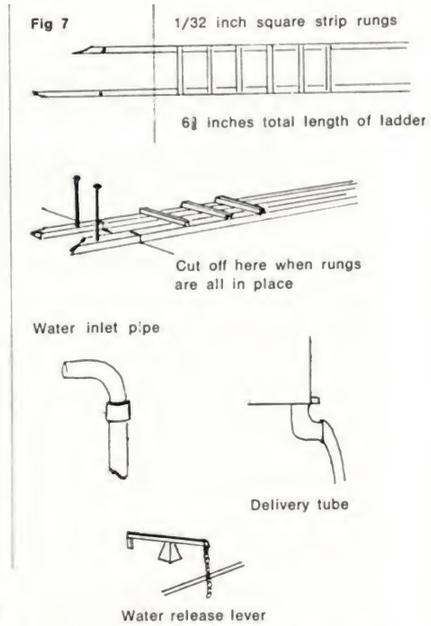
Fig 3



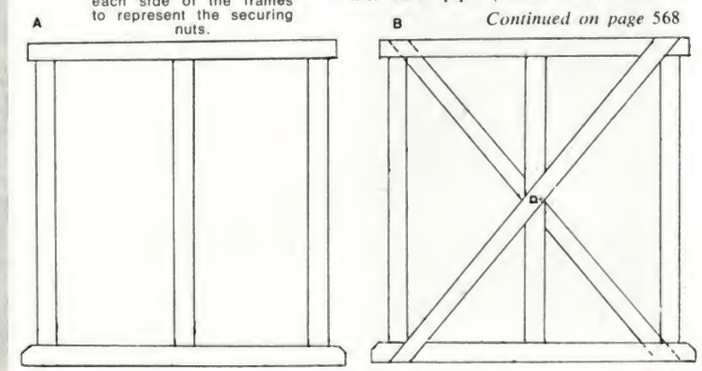
Inspection hatch detail

Fig 4





Figs 5A & 5B: Use 3/32 inch square balsa strip. Build up frames, make three, directly on plan or tracing of same. After each frame is glued lift from plan, sand joins lightly to remove excess glue and add diagonal braces (1/32 inch and 3/32 inch balsa strip) as shown. Add 3/64 inch squares of 1/32 inch thick balsa as shown on each side of the frames to represent the securing nuts.



Uniform details for the Airfix 54 mm scale figures

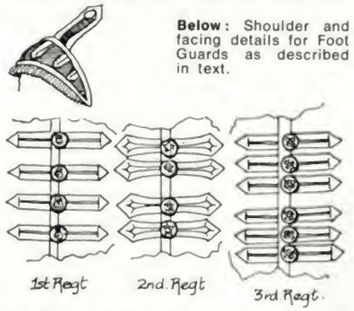
A special feature in which model soldier expert D. S. V. Fosten explains colours and facings for the 1815 uniforms

NUMEROUS readers have written to us in the past few months commenting on either the painting details, or clothing details, as supplied with the first two Airfix 54 mm scale figures. Various conflicting reference books have been quoted which in turn have sometimes caused extra confusion. We've published some of the letters received, including Mr Haythornthwaite's in the last issue. To round off the correspondence on this subject we asked D. S. V. Fosten, well-known British Model Soldier Society member and author, to make his comments on the matter. His observations appear below:

To start off with let us consider the uniform of the 10th Hussar figure as described on the packaging and painting instructions of the Airfix figure.

Mr Haythornthwaite is of course correct, the uniform described is not that worn at Waterloo. The 10th Hussars had taken their tall brown fur caps with the red 'fly' or bag to the Peninsular Campaign but this type of headdress was not suited to hard campaigning and in 1812, at about the same period that the Light Dragoons changed their dress fur-crested leather helmets for shakos, similar head-dresses were issued to the 10th. These were covered in red cloth as described by Mr Haythornthwaite, In Schaumann's book On the Road with Wellington *he records that a Lt Charles Jones was wearing a 'red schako' in the spring of 1812. The Regimental History puts the change in facings from red to blue as 1810 but it appears to have been much later than that. Trimen states that the 10th changed their facings from yellow to red in 1811 but retained silver lace (white for NCOs and troopers) until the change in blue facings in 1814-1815 when gold (yellow for NCOs and troopers) was introduced. The change must have occurred only a short while before the regiment left for Belgium as the Army List for 1815 gives red facings and silver lace.*

The evidence for red shakos being worn at Waterloo is reasonably strong. There are two paintings by Dighton, one in the Queen's Collection and one in the possession of the Marquis of Anglesey. Mr Haythornthwaite's description tallies with both of these. There are also sketches by Sebastian Norblin in the French National Library showing a similar schako and clearly indicating the black 'fall' or turned up back peak. Added to these references there is a water colour sketch in the Brussels Royal Library which was copied some years ago by the late Wynand Aerts. This drawing (by a man named Rubens) was alleged to have been drawn from life and was part of a preparatory work for a painting of the battle. Mr W Y Carman also confirms the red head-dress in his standard work British Military Uniforms from Contemporary Pictures. *Little evidence of horse furniture exists. Mr Haythornthwaite has carefully described the schabraque carried by officers in the Dighton paintings. Two further scraps of evidence regarding troopers and NCOs are worth mentioning. The late S. M. Milne, who was a very prolific collector of uniform detail of the British Army had an old water colour of a trooper of the 10th Hussars (This*



Below: Shoulder and facing details for Foot Guards as described in text.

sketch even further complicates the issue by showing a black oilskin cover to the shako!) with blue facings, yellow lace including the 'frame' and with a horse having the saddle covered with a buff sheepskin with red edging and a dark blue round valise behind the saddle and under the sheepskin with RXH on the ends in yellow and a blue cloak rolled over the withers. Sebastian Norblin also has a sketch showing buff sheepskins but with a yellow edge and a round blue valise lettered on the ends in white '10' and with a white edge piping. This is probably an old pattern before the facing change. The Airfix description is therefore of the 10th Hussars before the Waterloo campaign and has the full dress 'busby' head-dress and a parade schabraque.

The queries raised concerning the dress of the Foot Guards can be more easily answered. The Guards were organised in the same manner as the Line Infantry that is to

Above: Coldstream Guardsman as made straight from kit. **Foot of page:** 10th Hussar, both models as made from the basic kit.

say in Battalions, each of which was split into 'centre' or 'battalion' companies and the élite flank companies known as 'Light Infantry' and 'Grenadiers'. All three regiments wore the red coat with blue facings and with white plain worsted tape around the collar, along the cuff edges, down the front of the buttonhole side of the coat, along the bottom edge and down the edges of the turnbacks. The shoulder straps were also edged with this tape. The shoulders of the flank company jackets were decorated with 'wings'. Unlike the Line Regiments who had these wings in the same colour as the coat (red) the Guards had the wings in the facing colour blue. The wings were edged all round with a white worsted tape and had short white fringes. The blue part of the wing was barred with loops of the white tape in the same manner as the fronts of the coat the points of the loops being on the outer (fringe) edge. This was different to the Line Regiments who had strips of the regimental lace laid across the wings usually diagonally. The buttons on the fronts, the cuffs and the skirt pockets were set on at regimental spacing ie even for the 1st in pairs for the Coldstream, and in three for the 3rd. The pattern looping was also different for all three regiments. The 1st had point ended loops, the Coldstream 'bastion' loops and the 3rd point ended. The cartridge pouches and the knapsacks of the Regiments were marked with the badges of the Corps. The 1st the Garter, cypher and crown, the Coldstream, with the Star of the Order of the Garter, and the 3rd the Star of the Order of the Thistle. The Grenadiers of all regiments wore the bearskin cap for full dress (but not on campaign). This was black bearskin with a white plaited cord looped around with pendant tassels on the right side descending just below the level of the cap. The front of the cap had a semi circular brass plate which, no doubt, had regimental devices on it. On the left side of the cap was a white feather. By the Waterloo period the bearskin cap no longer had a red cloth patch at the rear but it is likely that a small brass replica of the regimental device appeared just above the edge at the back below the plaited cord. The Light Infantry company had shakos with green plaited cords and green tufts. It is likely, but not certain, that they wore the brass shako plate with the regimental device and a small white metal bugle horn beneath it. Some Line Regiments had the regimental number with a bugle horn beneath. The

SPACE SAVING MODELLING

Simple ideas for wall decoration by H. H. Wills

HOW often do modellers find themselves looking at the latest attractive kit with two sets of transfers, wondering which one to make or whether to buy two kits? Buying two kits can be expensive, but often the greater problem is space, where to display or store the model when it is finished.

I have tackled the problem in two ways. My first attempt was making kits with a small BA bolt cemented into the bottom and fixed with a nut to a large piece of framed pegboard with mirror plates for wall hanging. The large hole on the mirror plate was sawn through so that the pegboard could be lifted down from the wall easily for change of models and cleaning. With the board painted a pale blue and frame polished wood it has served well and is admired by visitors.

Even so, there is only space for about 20 small model aircraft and there remained the larger aircraft and helicopters. My HP/400 is free standing, as are one or two others, but the arrival

Above, right: *Two models made from one kit, completed in the two sets of transfers provided and mounted on a board for display.* **Below:** *Royal Navy Whirlwind helicopter; only one half of the kit has been completed, leaving the other half to be used for an alternative version which can be mounted in the same manner.*

of the larger series of kits such as the 1:24 scale Airfix Spitfire led me to re-think the problem. I already had a boxfull of completed kits in the shed and I did not feel like building to add to that collection. Large wingspans seem to attract young visitors and the corner of busy dusters, the end is inevitable; write-offs.

The solution was to display in relief using just one half of the model; this seemed a waste, but with two different sets of transfers now being issued with kits, it's possible to build both and save space.

For my first experiment I bought an Airfix Whirlwind kit and built it up in two separate halves. One was the Royal Navy version and the other XD 164 which served at A & AEE Boscombe Down. The latter also had the straight tail boom.

Assembly was straightforward, the main shell requiring the filing of the locating pegs on the left half of the body. The cockpit structure and rotorhead was carefully sawn in half. One rotor blade was cemented directly aft on each piece of rotor head, with the third blade cut in two and mounted on a stub facing directly forward. A new tail rotor was constructed from scrap. The rotating beacon of the RN version was retained and a file removed the traces on XD164. When finished they were mounted on white painted hardboard, with a natural wood frame to give the final touch.

There seem to be a number of possibilities for the use of this method of construction and display. It will double the number of models I can display on my pegboard, together with the fun of building them again in different schemes. One could make a very narrow and deep display and show a dozen different Spitfires from only six kits! I hope to make the large Airfix Spitfire this way, but it will be necessary to use a stub wing. The disadvantage of the plaque method of display for aircraft are the wings, but I think this could be minimised by a careful selection of kits. Some, like helicopters and short span single-engine jets, are easy, but multi-engines could be difficult.

Whilst I have mentioned aircraft, I think the plaque method of construction could be used to advantage by railway engine, ship, military and car modellers. At least it displays model in a safe, attractive and space-saving way.

Uniforms—continued

breast plates on the bayonet belt also differed, the 1st being rectangular, the second and 3rd oval. Most of these details are taken from the Charles Hamilton Smith plate of the Grenadiers of the Regiments in his Costume of the British Army 1812. These Hamilton Smith figures are in 'State Dress' with white breeches and long white gaiters. There is another plate in this series which shows Guardsmen in service dress in which case they have the grey/blue trousers worn inside calf length black gaiters. In the Dighton paintings the Guards are shown wearing trousers over the gaiters and with black oiled skin or cloth covers over the shakos with no devices on them. Sergeants have gold lace and loops and edging to the collars, cuffs, turnbacks and coat fronts and gold chevrons. The Guards NCOs had crimson waist sashes without the central stripe in the facing colour worn by Line Regiments.

Reader R. W. A. McCormick sent us this picture of an alternative version of the Queen Mary trailer featured in our February 1972 issue using a Matador towing unit instead of the Bedford OY version. Note the realistic load—the nose section of a Lancaster. In the background can be seen a Coles Mk 7 Mobile Crane, more details of which appear in our pictorial article on page 547 in this issue.

Medieval Walled Town

CONVERSION PROJECT FROM THE AIRFIX ROMAN FORT SET

By Terence Wise

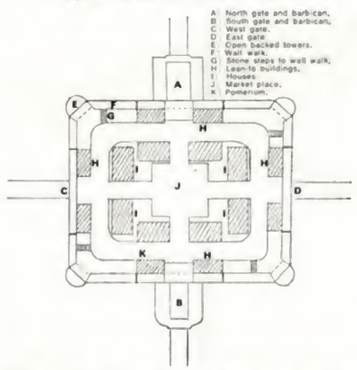
REFER to Fig A from last month (reproduced below) as work commences on the actual construction.

The Towers: Parts required for these are 4 × 2 (rear wall and gate). Part 2 is the only part in the kit which can provide a curve and so, although the result is a D-shaped half tower rather than a semi-circular one, unless you wish to scratch-build your towers, we shall have to first carve up four of our parts 2. They are each cut into five pieces: cut off the two sections of wall flanking the gate panel, using the side of the panel to guide the saw. Make sure you get a straight cut through the wall walk, here and in all future cutting through wall walks, by turning the piece over and finishing the sawing from the rear. Put the four gate panels to one side. Measure $1\frac{3}{8}$ inches in from the straight edge, just cut on the two side panels and cut these panels into two pieces; a straight section of wall $1\frac{5}{8}$ inches long and a curved end. Put the straight sections to one side for the east and west walls. Photo 1 shows a part 2, with above it another part 2 cut into the five sections just described.

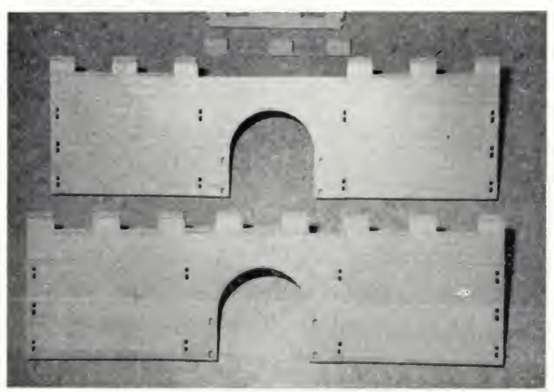
Take two of the curved sections and cut off all lugs. Clean up mould marks on the rear of the parapet, file the sawn edges to ensure a good fit, and cement the two halves together. The wall walk acts as a guide to obtain the correct curvature when cementing. Should the wall walk join be rough, cover it with a piece of thin plastic card, shaped as shown in Fig A (actual size). When the cement is set, score through the join line to clean up the mortar lines. Repeat this procedure three more times to make up the four corner towers.

These open backed towers will be the same height as the walls. In my own model I have preferred this, as it enabled me to have a continuous wall walk round the defences. If you wish to make the towers slightly higher, just cement a section of plastic card along the bottom edge, scored to correspond with the stone courses and mortar joints. Two courses should be sufficient. However, this will pose problems of how to link tower to wall walk, perhaps overcome by building steps at the ends of the walk on each side of the tower. The wall walk may be seen in Photo 2, which shows a view of the completed model. The 'timber' bridges, linking the walk across the backs of the towers, are made from plastic

Fig A repeated from last month



card, $2\frac{1}{4} \times \frac{1}{2}$ inches, scored to look like planking. These bridges could be speedily removed to isolate a captured



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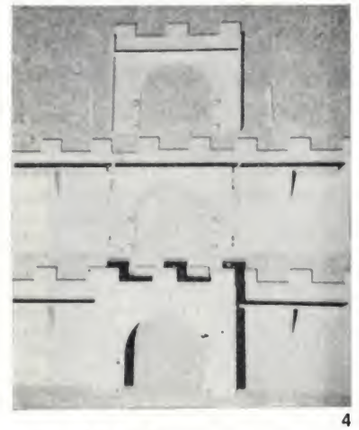
Left: *A part 8 adapted to form the outer face of the East Gate. At the top is the part 8 with tower face removed and the piece of parapet ready to be inserted in the gap; below is the new part—note the gap in the parapet to the right of the arch which requires a piece of coping stone.* **Top of page:** *The East Gate assembly.*



4

section of the wall.

There are several alternatives for filling the backs of the towers. The simplest method (discovered after several messy failures!) was to make up a piece of plastic card, $2\frac{3}{8} \times 1\frac{15}{16}$ inches, scored with stone courses and mortar joints, and cement this across the back. An attempt to do the filling with Mod Roc over a framework was not so successful. This latter idea was meant to represent a reverse side of rammed earth, which needed to have a slight slope rather than a vertical face. All was well until I tried to fit the sections of walling to each side of the towers; the angled rear face prevented a close fit. Another method is to fill the tower with Plaster of Paris, with a sloping rear face, and trim this gradually to slip into place between the two wall sections when they have been finished. The diorama maker, not worried about having the pieces separate, could cement the towers to the walls and so do the filling with the minimum of trouble.

The East Gate: Parts required are 1 × 8 (front wall and gate), 1 gate panel from a cut up part 2, 4 gates, 2 × 16 (lean-to face), 2 × 17 (lean-to roof).

The town, as shown in plan, has four gateways, the customary layout in medieval town defences. Of these I decided to make the east and west gates of minor importance and they are therefore relatively simple to construct. The part 8 forms the basis for the section, giving an external gate face with three inches of wall on each side. The only alteration needed is the removal of the upper part, over the gateway. Do this by sawing down at each side of the panel through the lug holes, and then scoring with a sharp blade, following the mortar line one course below the windows, so that the wall here is reduced to the same level as the crenellations in the wall sections flanking the gate.

From the piece just removed, ie, the top half of the tower face, cut off the parapet flush with the coping stones which top each crenellation. From this section of parapet remove a merlon from one end, together with 1/10 inch of a

2

1

Above: *A part 2 cut into five parts for various uses. See text.* **Left:** *This is what you are building. West Gate is at left.*

crenellation coping stone. Photo 3 shows this more clearly than my description. Clean off the ribs at the back of the parapet on the part 8, then cement the extra piece of parapet into the gap, leaving one crenellation without a coping stone. This gap will be filled at the end, when we have some spares. Now cut and file the wall walk, formerly inside the tower, so that it is the same depth all along the walk, ie, $\frac{3}{4}$ inch.

A gate panel from a part 2 forms the inner gate face. To get the proper fit, cut off the wall walk level with the sides of the gateway section, ie, $\frac{1}{4}$ inch deep. I found it best to do this cutting from underneath the walk as this allowed the saw to be guided by the gate sides. Smooth off all rough edges and cement the wall walks of part 2 and part 8 together, using 1 inch spacers at the gate bottoms to ensure the walls are vertical. The slots in the walk of the part 8 act as a guide for getting the part 2 exactly central. Photo 4 shows, from top to bottom, the part 2 section prepared, flanked by the spacers, the part 8 prepared, and the new gateway assembled.

The lug holes on the face of the part 8 need filling with Plastic Padding, shaved smooth and marked for mortar joints when set. Also plug the rather ugly holes where the gates are hinged—keep the holes at the back, for the gate pintles, free from Plastic Padding by inserting a piece of wire of the correct gauge. Don't forget to also plug these holes on the reverse side—on the part 2 gate panel.

The gates, being probably the most important part of the defences, I decided to make each of the four gate sections 'double-walled' instead of earth backed. This was accomplished by using the lean-to buildings, there not being sufficient spare wall sections. The method also has the advantage of increasing the number of buildings inside the walls without causing too much cramping. I regard them as guard houses, barracks for the garrison, or stables, handy in case of a mounted foray by the defenders of the town.

Two large lean-tos, parts 16 and 17, were used for these buildings, reduced to three inches in length. All lugs and lug panels were first removed, the roofs cut down to three inches in length, and the parts 16 reduced to three inches by removing the doorways (lintel and end post) from one end. Make sure to remove the left-hand end of one part 16, and the right-hand end of the other part 16. The sections removed are then cemented to the sides of the inner gate, projecting by $\frac{15}{16}$ inch. The main section of the part 16 is then cemented at right angles to this, running parallel to the wall, and held secure at the opposite end by a $1\frac{15}{16}$ inch spacer between wall and building front. The spacer is set back slightly, to allow for a side panel to be cemented to it. The roof sections (part 17) are then cemented to wall walk and lean-to face.

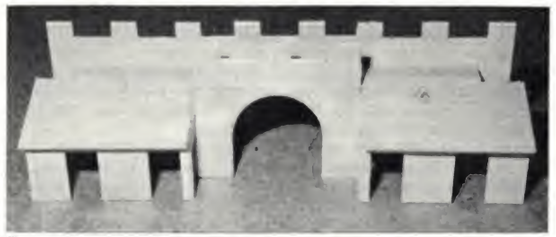
The ends furthest from the gate are filled with a piece of plastic card; Fig B shows the actual size. This should be given 'beams' of thin strips of plastic card as indicated by the figure. At the end nearest the gate a small triangular filler is needed; the actual size is given in Fig C. This is cemented in position from inside the building.

Finally, a 9 × $\frac{1}{4}$ inch strip of card is glued along the wall walk, resting on the side panels at the outer ends. If there is any gap between lean-to roof and wall walk, this can be filled with Plastic Padding. Photo 5 will help a good deal in explaining the construction of these lean-to buildings.

The West Gate: Parts required are 1 × 8 (front wall and gate), 1 gate panel from a cut up part 2, 4 gates, 2 × 16 (lean-to face), 2 × 17 (lean-to roof). Repeat the procedure exactly as described for the East Gate section. See photo 6.

Next month we finish off all four wall sections and make the more complex North Gate with its forbidding barbican.

Right: *The completed East Gate section from the inside, showing the lean-to buildings.* **Below, right:** *A close-view of the completed West Gate from inside.*



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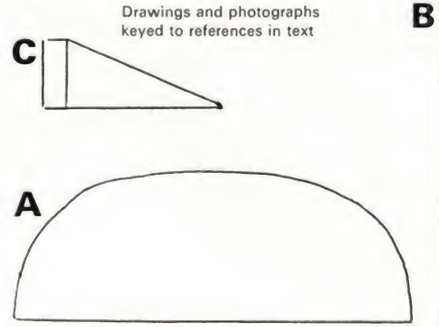
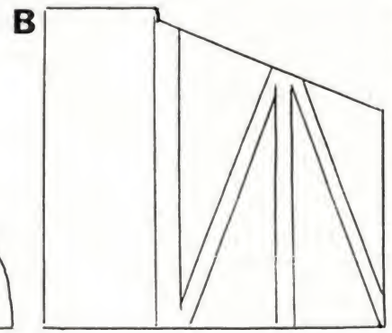
Drawings and photographs keyed to references in text





6

The Yak Family

A whole range of Yak models can be made from the Yak-9D kit by Airfix, all easy enough even for beginners to conversion work

By Brian Spooner

THERE are not many kits of Russian World War 2 aircraft available to modellers at present. Frog have produced the SB-2 bomber, and Revell have the 1-16. There is an IL-10 available from the Czech firm of KP. Fortunately, Airfix have come to the rescue with the IL-23M, Pe-2, and Yak-9D. The choice of the latter is indeed fortunate since it gives modification possibilities for four other Yak fighters, the Yak-1, Yak-3, Yak-15, and Yak-7. The Yak-7 is so very similar that it hardly warrants the word modification, but the other variants each have some physical feature which alters their outlines enough to make them look different. References to the Yak series of fighters can be found in Vol 3 of the series *War Planes of the Second World War* by William Green, published by MacDonald, and Series 2 of *Famous Fighters*, also published by MacDonald.

Yak-1

The Yak-1 first flew in March 1939. Along with the Lagg-3 and Mig-3, the Yak fighter formed a new generation in fighter design which had its origin in the 1938 programme. It showed a marked improvement over the elderly 1-153s and 1-16s which it was to replace, and won its designer a car and 100,000 roubles. It entered production in 1939 and entered service late in 1941. Although the first production aircraft differed little from the prototype, progressive improvements were made on the production line. Late production models were very similar to the Yak-9D without the cut-down rear fuselage. It is this which is the main feature for modification and forms an ideal beginner's conversion. You will also need a second Yak-9D canopy. The parts will not be wasted if you make more than one variant.

Stage 1: Glue together the two fuselage halves after painting the interior, and adding cockpit detail (if desired).

Stage 2: Cut the rear part from one Yak-9D canopy and retain the forward portion (do not throw away the other portion, it will come in useful when you attempt the Yak-3 conversion). From the second canopy the middle section is cut out and cemented to the first part with liquid cement.

Stage 3: Try this new canopy on your assembled fuselage and fit it by filing down any excess plastic at the rear of the cockpit.

Stage 4: The rear fuselage is then built up with scrap plastic and body putty, and similarly the chin air intake. A second gun trough is carved on the right-hand side of the fuselage and a gun blister added.

Stage 5: Complete the aircraft as per kit instructions, and coat the modified fuselage in clear dope and talcum and rub down. Finsh: Aircraft in available photographs indicate a Dark Earth and Dark Green finish, with Sky undersurfaces. The camouflage scheme appears very similar to that given in the Airfix kit of the Yak-9D. National insignia appears on the fin, fuselage sides and the undersurfaces of the wings. The red stars do not appear to have any outline, either yellow or white. Winter camouflage was off-white overall with red wing-tip panels that extended half the span of each wing with plain red star insignia in the usual places.

Yak-3

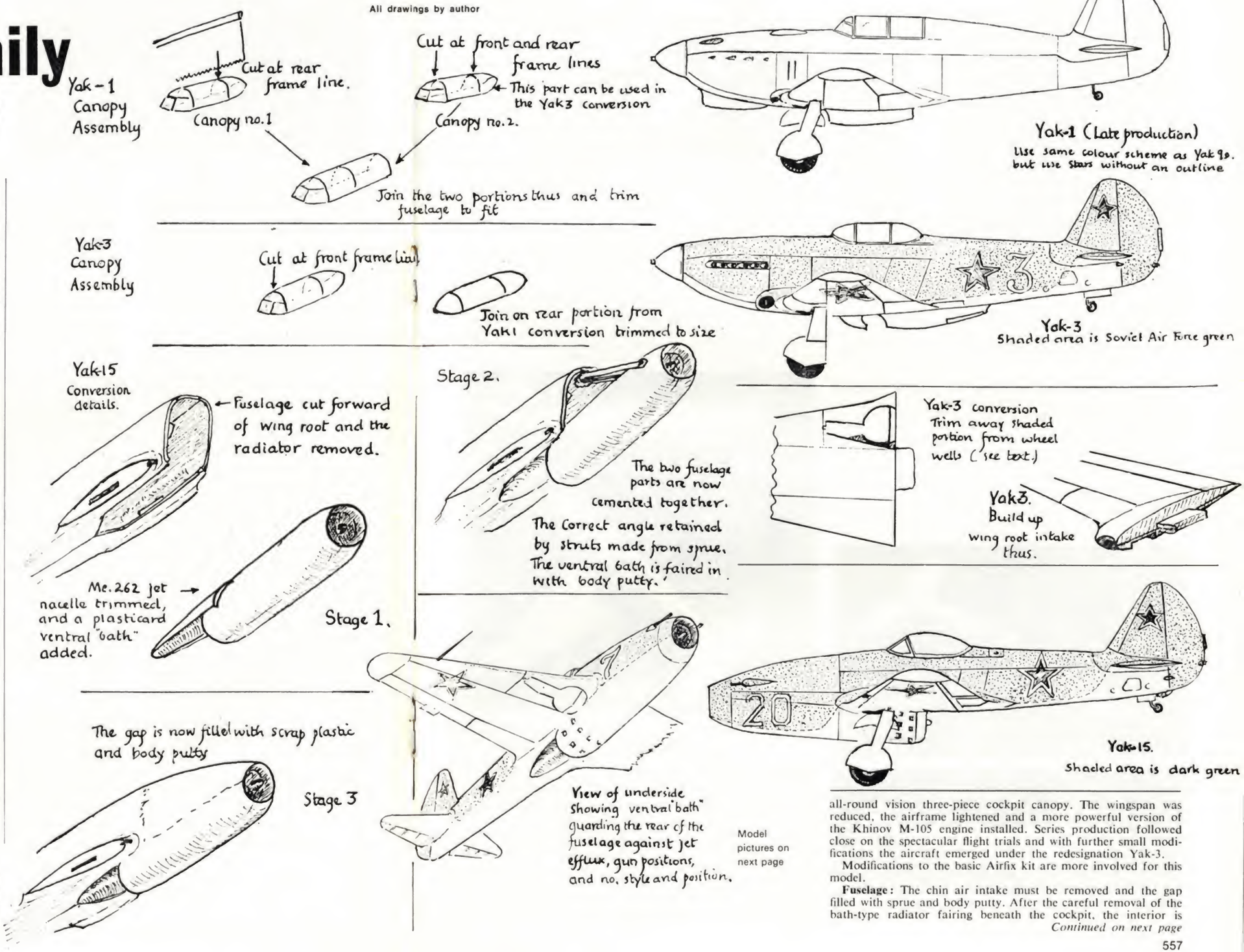
Development of the Yak-3 was undertaken in 1941 when the Soviet Air Forces demanded a low altitude fighter capable of upholding air superiority over the front line. Originally designated Yak-1m (m for modification), changes involved the cutting down of the rear fuselage (as in the Yak-9D) and the production of an all-round vision three-piece cockpit canopy. The wingspan was reduced, the airframe lightened and a more powerful version of the Khinov M-105 engine installed. Series production followed close on the spectacular flight trials and with further small modifications the aircraft emerged under the redesignation Yak-3.

Modifications to the basic Airfix kit are more involved for this model.

Fuselage: The chin air intake must be removed and the gap filled with sprue and body putty. After the careful removal of the bath-type radiator fairing beneath the cockpit, the interior is

Continued on next page

All drawings by author



Model pictures on next page

painted, cockpit detail added, and the fuselage halves cemented together. The radiator bath parts are cemented together, and repositioned on the fuselage as on the plan, and the contours are then built up with body putty. A second gun trough is carried on the right-hand side of the fuselage and a gun blister added. A set of engine exhausts from an Airfix P-51D were used in place of the kit exhausts on my model since they approximate to those actually used. You may have other scrap parts equally suitable.

Wings: The wheel wells are modified by straightening the aft edge (as in the diagram). The wing halves are then cemented together and new, enlarged wing-root air intakes built up with scrap plastic and body putty. The wingspan needs to be reduced by 5/12 inch overall. This can be done by cutting 5/24 inch (just under $\frac{1}{4}$ inch) from each wing-tip and then re-shaping them.

Canopy: This canopy can be made by moulding, using the method previously described in this magazine, or made as in the diagram from two Yak-9D canopies.

Finish: Yak-3s were painted in a variety of colours, including the standard overall green upper surfaces with Sky-Grey undersurfaces. One aircraft at least was pictured in doped silver. An aircraft numbered 12 of the Normandie-Nieman squadron appeared to be doped Dark Earth and Green. The Free French insignia appeared on the fin and the tricolour was painted on the tail and spinner. On a flight of Yak-3 aft of the national insignia, which was outlined in white, the code Nos 67, 3 and 58 appear.

Yak-15

During the closing months of the war, the Russians were able to evaluate the captured Jumo 004B Turbojet engine. It was clear that Russia then lagged behind her allies in respect of jet aircraft development. To counteract the advances in jet aircraft design and operation, Yakolev adapted the Yak-3u fighter airframe to accept the German Jumo turbojet, changing very little of the structure, and arching the main spar over the jet pipe. The resultant machine was a real-life 'conversion' used to familiarise pilots of the Soviet Air Force with the handling characteristics of jet aircraft and was designated Yak-15.

Modification: There are two methods for modification here. One can either retain the fuselage, and graft on to the nose of it

The Yak-15 looks radically different from the piston-engined Yak models yet it uses basically the same airframe. Author's model shows what an attractive model results from this conversion.

an Airfix Me 262 turbojet nacelle, which is exactly the right size, or make a new fuselage from wood, and only graft on the tailplanes, fin and rudder. On the original I chose the latter, using close grained pine rather than balsa because of its ability to withstand denting, etc. The other method described in the diagrams is, I think, as easy, and possibly less time-consuming as it retains the wing plugs and acceptance hole as a way of fixing the wing. After converting the fuselage, the kit is assembled as per the Yak-9D. This gives the early variant of Yak-15; later models had a tricycle undercarriage and revised fin outline. Unfortunately the canopy demands a moulding job, or at a pinch the canopy from the Me 262 can be converted.

Two views of the Yak-1 model under construction showing the rear fuselage build-up with scrap or spare plastic and covered with plastic putty.

Two views of Yak-3 under conversion from the Airfix Yak-9. Note altered canopy placed in position and wing root modifications. Canopy is not actually cemented down until model is completed and fully painted.

Finishing: The Yak-15 photos available show the aircraft to have been painted in the standard Soviet Air Force scheme of Dark Green upper surfaces and Sky undersurfaces. White outlined national insignia were carried in the same positions as other Yak fighters, and numbers were carried aft of the fuselage insignia or on the nose as shown in the diagram. For all three conversions, Dri-Dec sheets Nos 27 and 28 are very useful.

Using the Airfix Yak-9D kit in the ways described above, you can double the number of Russian aircraft available. Five variants including the basic moulding can be made. Most of the Soviet colour schemes used paint shades very similar to British colours. Those who want to be sure, however, will find precise Soviet shades in the Modelcolor paint series imported by BMW Models.

SWISS GUARDS

An attractive and easy conversion in 54 mm scale based on the Airfix Coldstream Guards kit

By R. E. Wood

I WANTED something really different and colourful to add to my collection of figures and, looking through *World Uniforms in Colour, Volume One,* I found it; a Swiss Guard, one of the 116 who defend the Vatican City State. The uniform is certainly colourful, being blue and yellow stripes over a red undergarment, the ensemble designed, according to tradition, by Raphael or Michelangelo. I chose as my subject the drummer shown on page 10 of the book; he seemed lively, and surprisingly easy to build by converting the Airfix 54 mm scale Coldstream Guardsman kit. Apart from the kit, a few scraps of 10 thou and 20 thou plastic card, and a little body putty is all the extra material required.

Start with the legs, and carve away the trousers above the gaiters, and up to a point just below the knee. Shape the calf, and make the gaiters blend in at the ankle (Fig 1). The upper part of the leg becomes the breeches. Cut off the locating prongs on the right leg.

Each leg of the pantaloons is formed of eight strips of the plastic card from the kit. The strips are $\frac{1}{16}$ inch wide, and you should allow about an inch of length. Using as little cement as possible (the card melts rather easily), stick the strips around the bottom of the breeches (Fig 2). Paint the breeches red at this stage.

Now bring each strip up, and cement it to the breeches; remember the pantaloons look a little baggy, so allow a slight droop at the bottom (Fig 3). Trim off the surplus ends at the waist and crutch, and cement the legs together in a marching position. File or sand the top, or waist, flat.

Join the body halves together. File off all the straps and other detail, cut off the jacket tail, and all but a little bit of the collar. Leave a slight ridge on which to build the ruff.

The effect of the tunic fastening left-over-right is gained by cutting a line down the front of the body, and then cutting back on one side of it, so that the figure's left side stands a little proud (Fig 4). The ruff collar is best built of body putty, trimmed to shape when dry. Don't forget to ruffle the edges (Fig 5).

The left arm is the bent arm from the kit. Trim the forearm to represent a sleeve tight to the elbow, but leave a cuff about $\frac{1}{16}$ inch wide at the wrist (Fig 6).

The right arm, again the bent one from the kit, needs a little more work. The forearm must be cut off and replaced at a more acute angle, and the hand is cut off and replaced palm downwards. The lower arm and the sleeve to the cuff are shaped in the same way as before (Fig 7).

The upper sleeves are made in exactly the same way as the pantaloons. This time, six strips of the thin plastic card are used. Fix them just below the elbow, and after painting the upper arms red, curl them up and cement them at the shoulders again allowing for a sag at the elbows to simulate the bagginess (Fig 8).

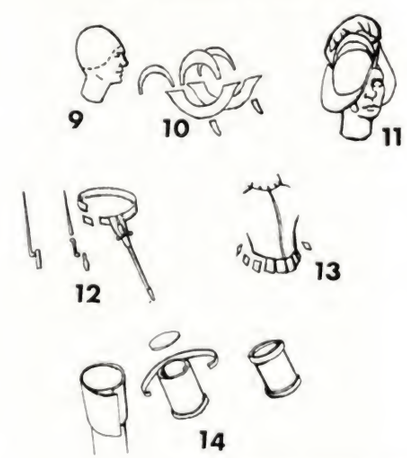
The head and helmet are probably the hardest part. Cut off the sideburns and ears, and build up the helmet crown with body putty, bringing it down the sides of the head as far as the ears (Fig 9). Allow plenty of time for the putty to set really hard, before adding the brim and crest.

These are cut from 10 thou card, to the patterns shown (Fig 10). The crest is a sandwich of three pieces. Notice the upward curve on the brim at the back and front. When it is fixed, a little sanding and the use of body putty will achieve this. It might be a good idea to leave the lower edges of the brim untrimmed, and give them their final shape after they are fixed in place. A blob of putty makes the plume. Fluff it up while it's still soft with the point of the knife. Two narrow pieces of card make the cheek-pieces (Fig 11).

The sword and belt for the model are made next. Page 9 of *World Uniforms in Colour* has a good illustration to use. The bayonet-sheath from the kit becomes the scabbard, and 10 thou plastic card makes the strap. The drawing shows how the bayonet itself becomes the hilt, in two pieces (Fig 12). The bayonet socket

Continued on page 563

Above: *The model from the front shows the effectiveness of the stance with one foot leading, as if on the march. Careful painting is necessary to make a good job of the striped uniform. Details can be seen in the drawing opposite.*



Drawings keyed to text

Auto Blinda AB 40

Models of Italian World War 2 AFVs are virtually non-existent in 1:76 scale; the AB 40 is the easiest to make from scratch if you follow Gerald Scarborough's instructions

Right: *Two views of completed model. Note in particular the neat modelling of the distinctive wheel hubs which are adapted from wheels in the Airfix Flak '88' kit. Embossed rivets are most effective.*

ONE of the few Italian armoured cars produced in World War 2, the AB 40 was the first in a line of very similar models. It was designed as a high speed, manoeuvrable, fighting vehicle and came into service with the Italian Army units in 1940-1 and gave useful service in the Western Desert. Power was provided by a SPA 110 hp engine driving four independently sprung road wheels, giving it a top speed of about 45 mph. Four-wheel steering gave good manoeuvrability with small angular movement of the wheels. Steering was possible from either end and the gearbox provided for six speeds forward and four speeds reverse. Two spare tyres, on detachable rims, were carried, one each side recessed into the hull, and these were free to revolve, giving some support, though not drive, in soft going. The vehicle was crewed by a driver (sometimes two were carried), a rearward-facing gunner, and what must have been a very busy commander/gunner in the turret, which was equipped with a 20 mm Breda and an 8 mm machine gun. The turret was fully rotatable through 360 degrees. The rear gun had 28 degrees of traverse and must have been very useful when quitting the scene of battle in a hurry. The rear hatch to the turret was for gun installation purposes, not access, which was either through the two side doors or the turret top hatch. An interesting feature was the hinged flaps over the headlights which were in the hull front.

To model this rather complicated shape is quite a challenge but my drawings and the following construction details should enable anyone with reasonable skill and a little patience to make it. Another complication is the mass of rivets, but if you keep to the thinner plastic card, these are simple to indent with a compass point. This does mean that the actual construction needs additional care, and cement must be used sparingly.

Start by modifying four roadwheels taken from the Airfix '88' kit; these have to be altered by part filling the spaces between the spokes. To do this, I pressed the wheels face down halfway into a block of soft Plasticine and simply filled in the backs with Plastic Padding. When this has set, remove them from the Plasticine and clean off any odd bits that still adhere to the wheel; they should now look like Auto Blinda wheels. For the 'spares', fit a plastic card disc to the outside, slightly conical, and not right up to the rim.

For the hull, first cut out the part marked A on the sketch, cutting this, of course, undersize to allow for the thickness of the sides and ends. This point of cutting various parts undersize to allow for those that will be fitted later is something that you will learn to do automatically (if you don't already); similarly you should remember to impress rivet detail and score in any panel lines where appropriate. You will see from the drawing that part 4 bends down slightly to the rear on which the engine cover is built, so just score lightly and form to correct shape. Next the two bulkheads B and C should be fitted vertically to A on the underside, together with the two rectangular inner hull sides E, which will give rigidity and provide a location for the 'spare' wheels.

The two side pieces can now be cut out and these are quite difficult as so much has to be cut away to allow for the wheel apertures, the section above the rear wheels calling for particular care to avoid distortion. It is in fact better to mark out the sides on the plastic card, impress the rivets, cut out the wheel apertures and then cut round the outline. Again score at the bend line and form this to shape so that the top will fit, using a bulkhead to get it true if you wish. Follow this with the T-shaped front marked D on the sketch and the rear of the fighting compartment E, and the fighting compartment top.

The two sides of the nosepiece, which go right back to the internal bulkhead B, are now added, but make certain they are parallel. In fact, the four nose faces can all be added at the same time to preserve the squareness. To complete the basic hull, add the two rear faces and then build up the engine top deck and the sloping sides and corner triangles. Those who have followed previous articles will know the technique for forming mudguards and on this model I made the rear in one, right across the full width to give added strength to the rear assembly, while the front two were made as separate items. They are quite simple to mould by curving a strip of 15 thou plastic card, cut to the correct width and appropriate length, round a wooden dowel of the correct diameter. This is then bound with soft wool to hold it in place while it is plunged into hot, in fact, near boiling, water, where it is held for about a minute before transferring to cold water to set the shape. The length can be trimmed off and corners rounded as appropriate before cementing in position.

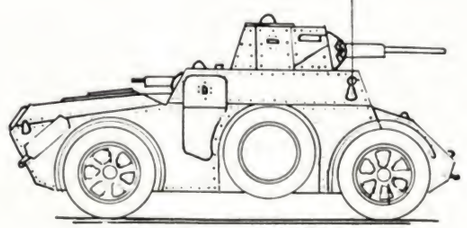
Detailing of the hull is straightforward with access doors and engine hatch covers from thin plastic card, the rear engine grille either built up from microstrip or scored neatly on 30 thou plastic card, width indicators, tow hooks, aerial, etc, from stretched sprue, and all periscopes, vision blocks, tools, lights, exhaust silencer, etc, from scrap plastic or the spares box. The wheels can be mounted on cocktail stick axles through holes drilled in the nose side pieces at the front and in either simple strip supports or backing plates cut to fit inside the rear one-piece mudguard.

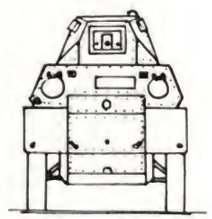
The turret I made from plastic card but if you are handy with balsa wood you could use this instead. For a plastic card turret, build up on a base, adding the front and rear faces, which can be held in place with internal formers, then the top, followed by the two sides and, finally, the 'corners'. Mantlet and gun from scrap, vision ports, hatch covers, etc, can then be cemented in place to complete.

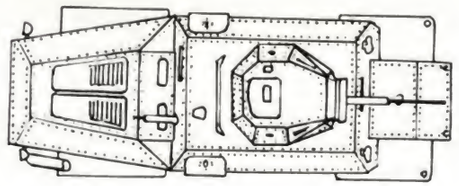
Finish of my model is in Humbrol Afrika Korps Desert Sand with random striping of a reddish brown. Basic sand is, of course, the usual North Africa colour scheme but this does vary from freshly applied to very pale bleached or cream colour with brown and green mottling as an option.

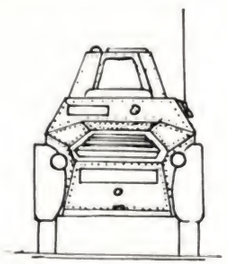
1:76 scale

Drawings by Gerald Scarborough

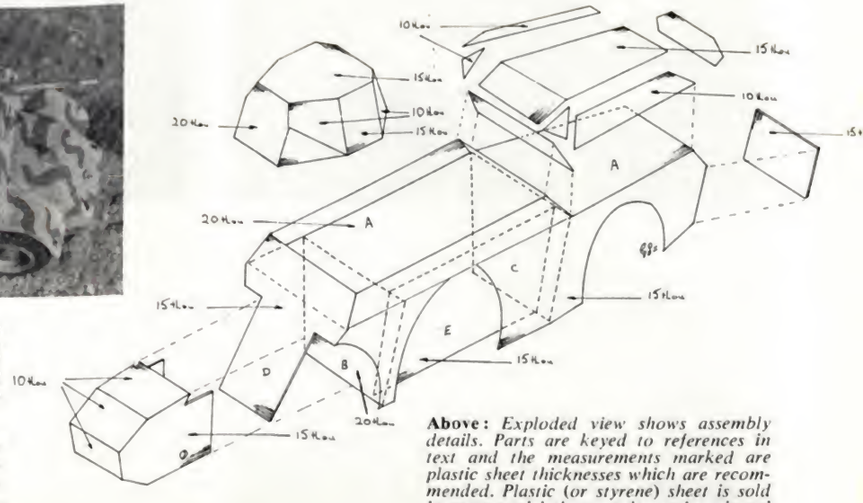








Above: *The simple camouflage scheme greatly enhances the finished model. The rivet detail does not always show up and could very well be omitted by beginners.*



Above: *Exploded view shows assembly details. Parts are keyed to references in text and the measurements marked are plastic sheet thicknesses which are recommended. Plastic (or styrene) sheet is sold in most model shops under various brand names, such as Polykard and Plastikard.*

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Above: *Two views of the same pair of models converted and painted as Afrika Korps engineer troops. Prone figure is from the Airfix German set and the man with the mine detector is from Tamiya's 1:35 scale range. Note shading painted in, very necessary on light coloured figures.*

AFRIKA KORPS MODELS

by Robert C. Gibson

2: Engineers

THE normal function of Engineer units in the German Motorised and Panzer divisions was to assist the advance of the fighting troops by clearing paths and overcoming obstacles in their way. The principal weapons used for this task were demolition explosives, flamethrowers and bridging equipment.

In the fluid movement to and fro of the desert battles, the Afrika Korps engineers became fortress builders and layers of minefields in defence, and fortress breakers and mine clearers in attack. The bridging equipment was left behind; the flamethrowers too.

Organisation: The Engineer Battalion (Pionier-Bataillon) in the Panzer and Motorised (Panzergrenadier) Division were organised on a slightly different basis to one another.

Diagrams A and B show the organisation of a Panzer-Pionier Bataillon (Armoured Engineer Battalion) which would be contained within the Panzer divisions. Note that the bridging column and assault boat units would not be on the Afrika Korps battle strength.

Diagrams C and D show the organisation of a Motorised Engineer Battalion such as the 90th and 164th Light Divisions might contain. Again, bridging and boat units would not be on strength for 'Afrika' units.

The Panzer Is used by the armoured formation would likely be of the Munitions-Schlepper I variety, which was a Panzer I chassis with a box frame 'cab' and load-carrying platform, used to carry engineer materials and munitions in this instance. The Panzer II was probably standard but with command radio equipment.

It will be noted in the more comprehensive breakdown of equipment given in Diagram D, such equipment as powersaws and air compressors are mentioned. These were used to great effect in the desert campaigns to construct tank traps.

Uniform and Personal Equipment

The engineers were similarly dressed to the infantry, as described last month, the principal difference being in the black 'waffenfarbe' piping on shoulder straps and as centre stripe on the collar 'litzen'. All carried personal weapons: rifles for the men, MP 38/40s for the NCOs and junior officers, pistols (P 08 Luger or Walther P 38) for senior officers.

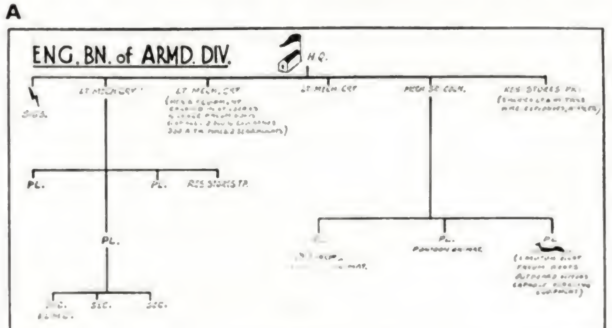
Modelling

The 20 mm figures are catered for this month by three figures from the Afrika Korps set marketed by Airfix. They have been used to depict a group of engineers clearing a minefield.

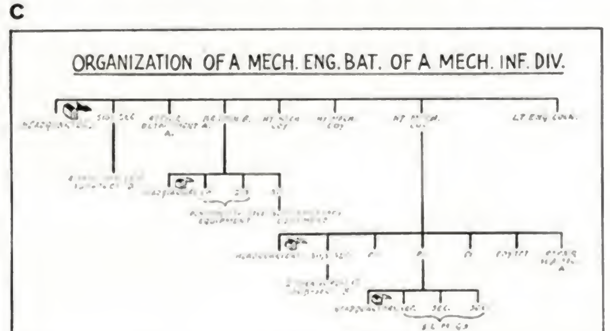
The crawling rifleman simply has the rifle removed and replaced by a 1 mm thick 'slice' of hard sprue to represent an anti-tank mine. The advancing rifleman with rifle at hip has the rifle removed and replaced by a 15 mm long piece of 20 thou diameter plastic rod, tipped by a mine sensor cut from 1 × 3 mm 20 thou plastic card and rounded off. Wires and earphones may be added from scrap if desired. The third man is standing guard over the other two: all are painted in khaki drill uniforms of varying stages of bleach with drab webbing and black piping; boots are black or brown. These three figures are only a sample of what can be done with the set as many other types of engineer work can be modelled with a little thought and some odds and ends from the scrap box. The surrendering figure is particularly useful in this respect as he can be used to do a variety of jobs with minimum alterations.

The 54 mm figure is the machine-gun loader from the German Infantry set with the ammunition box removed. He can now be used for a variety of minelaying or mine-removing tasks. This particular figure has been given a faded field grey tunic with Continental insignia (as opposed to Afrika Korps), drill trousers, jackboots and a standard helmet with Wehrmacht insignia. Such variation in clothing was not abnormal; indeed, in the cold desert night, a non-tropical tunic might be very welcome out in the minefields! If a tan-coloured helmet is desired, remember that no standard insignia existed: variations of the DAK 'palm and swastika' were used, if anything was painted on it at all.

A



C



B

Strength and equipment of Armoured Engineer Battalion attached to Armoured Division.

	L.M.G.	20 mm. Tank Gun.	Small Flame Throwers.	Hand Grenades.	Smoke Grenades.	Smoke Generators.	[illegible]	Motor Vehicles.	M.C.	Armd. Troop Carriers.	Armd. Sig. Cars.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Bn. H.Q.	—	—	—	—	—	—	—	19	9	—	—	—	—	—	7	64
Armd. Eng. Coy.	35	1	—	450	50	145	—	26	15	6	1	—	1	11	5	173
Lt. Mech. Coy. (2)	9	—	—	190	—	155	—	35	10	—	—	—	—	—	4	205
Tk. Bridge-laying Pl.	5	1	—	—	—	—	—	1	1	—	—	4	1	—	1	21
Br. Coln. K. without Tank Bridge-laying Pl.	—	—	—	—	—	—	—	37	9	—	—	—	—	—	2	96
Lt. Eng. Coln.	—	—	6	600	225	110	3	19	7	—	—	—	—	—	2	60

Strength and Firing Power attached to the Armoured Engineer Company.

	L.M.G.	20 mm. Tank Gun.	Motor Vehicles.	M.C.	Armd. Troop Carriers.	Armd. Sig. Cars.	Pz. Kw. II.	Pz. Kw. I.	Officers.	O.R.'s
H.Q.	3	1	1	3	—	—	1	1	1	12
Hy. Eng. (1) ...	4	—	1	2	6	1	—	—	1	52
Lt. Eng. Pl. (4) ...	8	—	8	2	—	—	—	—	1	56
Demolition Pls. (1 and 2 each) ...	10	—	1	1	—	—	—	5	1	17
Sig. Sec.	—	—	2	—	—	—	—	—	—	6
Coy. Tps.	—	—	10	4	—	—	—	—	—	29
Repair Sub-Sec. (b)	—	—	2	2	—	—	—	—	—	9

D

Strength and Equipment of a Mechanized Engineer Battalion attached to a Motorized Infantry Division.

PERSONNEL AND WEAPONS.

	L.M.G.	Small Flame Throwers.	Hand Grenades.	Smoke Generators.	Large Flame Throwers.	Horse-drawn Vehicles	Motor Vehicles.	Horses.	M.C.	Officers.	O.R.'s
Bn. H.Q. ...	—	—	—	—	—	—	19	—	9	7	64
Lt. Eng. Coln. ...	—	6	480	325	3	—	16	—	7	3	65
Hy. Mech. Coy (3)	9	—	190	155	—	—	21	—	12	4	203
Br. Coln. B. ...	—	—	—	—	—	—	35	—	7	2	100

Equipment of Engineers (Motorized Infantry Division).

	Sandbags.	Barbed Wire (Concertina Rolls).	[illegible]	Large Compressors.	Small Compressors.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Lt. Mech. Coln....	600	65	2	2	—	600	2	620	—	2	—	10	3	1,150	100	[illegible]	—	—
Hy. Mech. Coy. (3)	600	—	3	—	3	300	9	—	10	9	—	—	—	650	75	2,000	3	4
Br. Coln. B. ...	—	—	—	—	—	—	—	—	—	—	8	—	—	—	42	—	24	48

The 1:35 scale Tamiya figure is from their Afrika Korps set, and carries, like his 20 mm counterpart, a German mine detector. A pair of earphones are fitted to the unhelmeted head, and the head is built up to allow the helmet to fit snugly over them. A 90 mm length of 40 thou diameter plastic rod is cut, and a handle 5 × 5 mm is made from 1.5 mm wide 20 thou plastic card, and fitted 15 mm from the rear end. On the front end, a mine sensor 2 × 6 mm, rounded on all edges, is cut from 60 thou plastic card and added at a slight angle (1°-2°). The device is then placed in the operator's hands, and a 10 × 8 × 5 mm pack is placed on his back webbing. This is connected by wire to the 'pole', and to the earphones: use very fine wire. The detector and equipment should be painted semi-gloss black (Humbrol 'Dirty Black').

Again, these two figures are only examples and with a bit of ingenuity many other figures can be converted to portray various aspects of the Afrika Korps' work. In 20 mm scale, the Sd Kfz 7 half-track makes a good engineer vehicle.

Above, right: *Typical Afrika Korps Gefrieter (corporal) wearing infantry assault badge and in faded and well-worn reed green tunic* (Imperial War Museum). **Right:** *Models made to 20 mm scale by converting Airfix Afrika Korps figures.*

Swiss Guards — from page 559

is first shaved carefully into the handgrip, and then cut off. Then the blade is bent as shown, and the resulting S shape is cut off to become the cross guard of the sword. It's nice to know that none of the bayonet is wasted, as what is left of the blade becomes one of the drumsticks. I made the other one from sprue. Assemble the sword and belt, but before fixing to the body, stick on the tunic bottom. This is made in separate pieces, as wide as the trouser strips (Fig 13).

Which brings us to the drum. If you don't feel up to making your own, use one ready-made from Historex. But making your own isn't really so hard. The heads, top and bottom, are discs of 2 thou card $\frac{1}{16}$ inch in diameter. A draughtsman's radius aid is useful here. Roll a strip of 1 inch card $\frac{1}{8}$ inch wide around a former. (I used a felt-tip pen which was just the right size. Thinking about it, I could have cut a slice from the pen!) Sand the join down, take it off the former, and glue on the heads. Raised rims, $\frac{1}{16}$ inch wide, are added top and bottom, overhanging the edges by about half their width. The ropes on the drum sides are simply painted on. I tried to make some to scale, but failed (Fig 14).

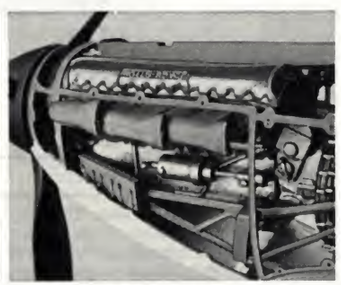
So there he is. With a sash of 5 thou card, and a careful paint job, the result is a very individual little figure. With the price of the Airfix kit being so low, I think there is even more scope for conversion here.

Right: *Another view of the Swiss Guards model. Base is from Guards kit but the model could be mounted on a flatter base. One idea would be to use a piece of Faller embossed paving or stone card.*

Get this 24th scale SUPER KIT!

The first of the new Airfix Super kits flies in—the Spitfire Mk 1A! With 150 detailed parts, here is perfection in aircraft modelling! This magnificent 24th scale model features a superbly detailed cockpit, Browning machine guns complete with ammunition boxes and a super detailed Rolls-Royce Merlin engine beneath removable panels. A propeller motorising unit is available.
This new Airfix Super kit is undoubtedly one of the finest aircraft kits ever produced and a 'must' for all keen modellers.

Superbly detailed cockpit


Rolls-Royce Engine detail

The Browning guns

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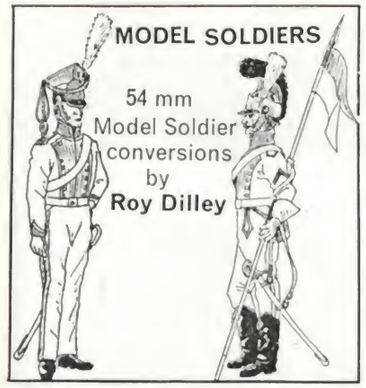


Above: *Four of the new Britains Deetail figures representing the American Civil War. These figures are ideal for conversion work as they are made of PVC plastic, some ideas for this are described below.*

MANY of the models and conversions with which I have dealt in this series of articles involve the combination of several unlike materials in their construction. For instance, a figure might be put together using a hard plastic basic torso, a metal head and head-dress, paper or ribbon belts and straps, and putty of one kind or another to build up certain areas. When the resulting piece is completely assembled and painted its component parts blend harmoniously together without their various origins being at all noticeable. This is not to denigrate in any way the models made entirely from one substance, such as metal 'collector' miniatures, or the range of polystyrene kit figures which are now so popular, but it does make the point that the average modeller can utilise whatever basic figures or accessories are most suitable for his purposes, irrespective of the materials from which they are made, with all the variety and flexibility of choice which follows from this freedom. The amount of improvisation required to deal with specific items of dress, equipment or attitude, is also much reduced, which is a great boon to beginners or to established modellers who want to complete a project as speedily and handily as possible. An example of this sort of practice would be the uniting of a hard plastic sword within the hand of a metal model, epoxy adhesive providing the necessary bond, rather than the laborious beating out of a pin for the sword blade. With a guard made up from fuse-wire, the whole thing being soldered into position. This simple case demonstrates the advantages to be gained by the use of modern adhesives. Of course, as he gains skill and confidence, a modeller may well want to face the challenge presented by the pin, fuse-wire and solder technique,

Continued on page 578

COLOUR DETAILS

Fig 1

Cap and cover: White with black peak.
Shell-jacket: Red, with collar and cuffs of regimental facing colours (eg White for 32nd Foot of Lucknow). Brass buttons.
Trousers: Blue or white with narrow red stripe down outside seams.
Sash: Crimson.
Belt and slings: Buff.
Holster: Brown or Black leather.
Sword scabbard: Black with gilt fittings.
Boots: Black.
Haversack: Off-white.

Fig 2

Helmet: Buff—tea-stained.
Jacket: Dark bue with black lace frogging.
Breeches: Dark blue with red stripe down seams, or khaki.
Boots: Black or brown leather.
Belt and holster: Brown leather.
Scabbard: Black with gilt fittings.
Haversack: Off-white.

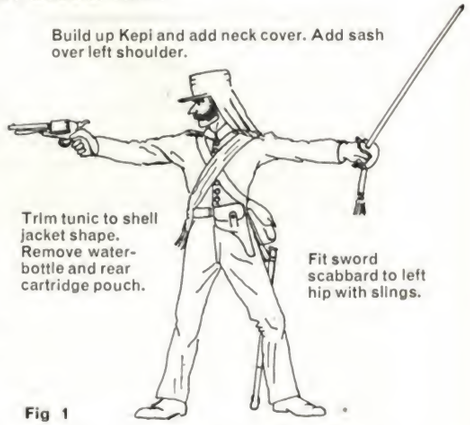


Fig 1

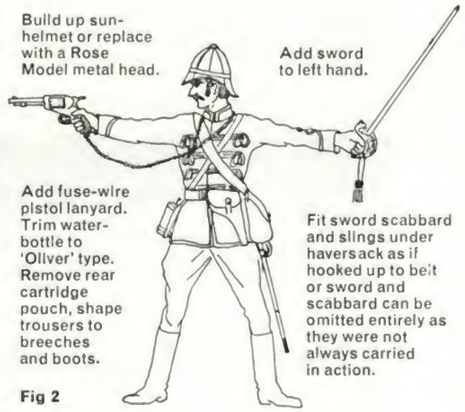


Fig 2

Below: *American and German infantrymen from the Deetail range; as can be seen, animation is of a high order and with a little more work adding pieces of equipment they will make up into exhibition standard figures.*

Fig 4: Detail of lacing on front and rear of blue infantry patrol jacket. All lacing is black mohair. Design on cuff is of the Austrian- Knot pattern.

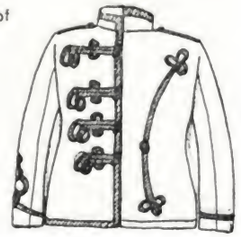


Fig 3
Shape of 'Oliver' type water-bottle and straps

Make an FE8

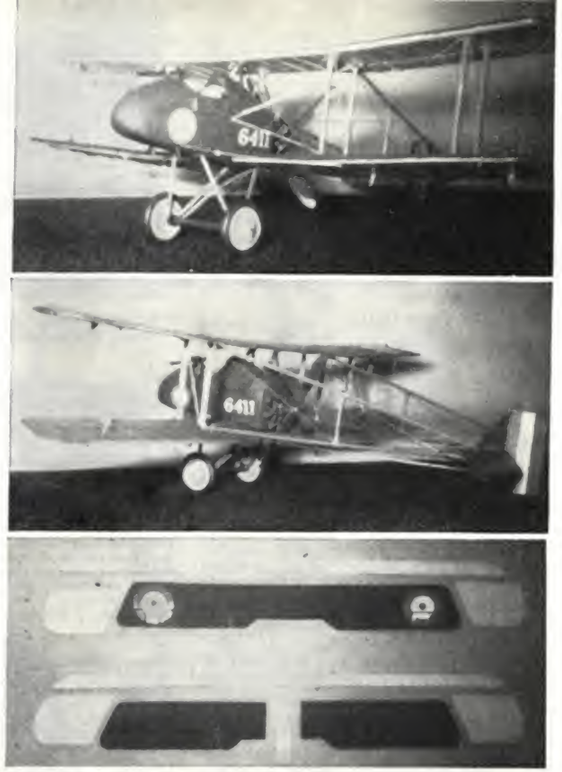
Advanced conversion of an unusual aircraft by Tony Woollett

BY making simple mouldings from plastic card it is possible, with the aid of existing kits, to not only make modifications, but also to make completely different types of aircraft. It is the purpose of this article to illustrate this point. Two basic kits are used, in this instance the Avro 504K and the DH4. From these I have produced a vastly different aircraft of the same period. I have set out to use as many parts as possible from the kits and only used plastic card and the spares box as a last resort. This month I deal with what is to my mind an aircraft immensely pleasing to the eye—the FE8.

Designed at the Royal Aircraft Factory, the first prototype made its first flight in October 1915, but due to manufacturing difficulties, the first Squadron No 40 was not equipped with the aircraft until August 1916, and a second Squadron No 41 reaching the Western Front in October. By this time the Germans were using Albatross D1s and D11s and the FE8s were hopelessly outclassed. Nevertheless, 40 Squadron used them until March 1917 and 41 Squadron were not re-equipped with new aircraft until July 1917.

Fuselage The fuselage was moulded as previously described in the Fox Moth article in the November 1971 issue of *Airfix Magazine*. This is basically a very simple shape to mould. Do not attempt to mould the headrest integrally with the fuselage, just mould the basic shape adding the headrest at a later stage of the construction. When you have mated the two fuselage halves—remove the rear face of each fuselage half and from 30 thou plastic card cut out a new rear bulkhead and cement it into one half of the fuselage, also drill out the hole in the rear bulkhead to take the rotary engine shaft: the shaft should be a *tight* push fit in the locating hole. Then cut out the cockpit shape. Continue by detailing one half of the fuselage by adding a false floor, seat, rudder bar control column, instrument panel, throttle control, and fuselage stringers in each fuselage half. Referring to the plan cut out the step in the port fuselage half; I did this with the tip of a modelling knife, finally shaping it with a very small half-round file. The two halves can now be stuck together and left to set.

Taking the DH4 fuel tank, this can now be cut and filed down to form the headrest and when satisfied, cemented in position, finally adding filler to fill in the front end of the headrest. When everything has set, smooth down joint, line with flour paper and/or wet and dry. Scribe panel lines on fuselage. Make up from plastic card, and fit and cement, the two ammunition boxes either side of cockpit.



Above, top to bottom: *Two views of the completed model made from parts of a DH 4 kit, note the rigging made from fine gauge wire and the twin tail booms from plastic sprue. View showing the amount of trimming needed on the DH 4 wings to get the correct shape for the FE 8.*

Below: *General view of components taken from the DH4, 504K, and the spares box.*

Paint Paint fuselage and add roundels and numerals. Cockpit edge and headrest is painted to represent leather and step is edged with Humbrol Steel colour.

Wings The cord and span of the FE8 is much smaller than the DH4, so it is now necessary to reduce their size by the following stages:

(1) By careful pressure bend the dihedral out of the top wing. Detach two of the locating bars from the DH4 interplane struts and the bars from centre section struts and cement these bars into the two in-board and centre section locating slots on the top wing. Allow to set for twenty four hours. At the same time fill all strut locating holes and when dry smooth to contour of wings.

(2) Cut away from the leading edge of each wing, a strip ¼ inch wide. Then referring to the plan, cut away the four wing tips, so that you are left with wings roughly cut to shape. With file and flour paper bring the wings to their correct shape by rounding off leading edge and wing tips. The centre section cut out needs enlarging on both wings and should be done at this stage referring to the plan constantly.

(3) The ailerons should now be lengthened and their angled ends cut with a modelling knife at the same time filling and making good the old ends.

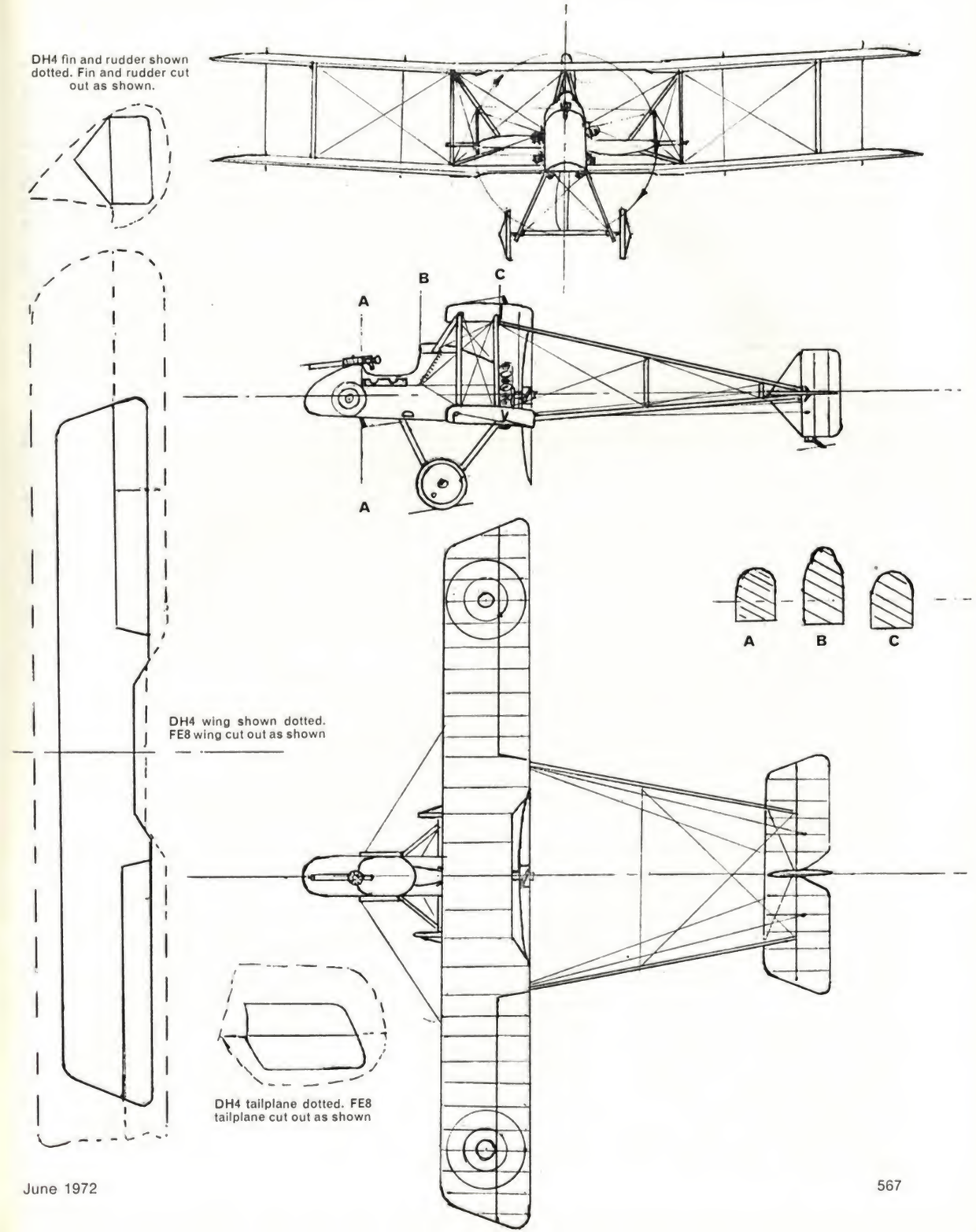
(4) Remove all control horns.

(5) Add a wing rib to the top wing straight across the exact centre of the centre section. I did this with Borden Wood Stopper (waterproof) rubbing it down to shape when set hard.

(6) You now have to set the dihedral angles on both wings. Referring to the plan, score the top side of each wing at the point where the dihedral commences. Score quite deeply and then score lightly on the undersides. You should now be able to bend each wing to the required angle without breaking. Run cement into the score lines and leave to set with a weight on each centre section, and supports under each wing tip, checking that the amount of dihedral is correct and identical on each wing. Allow twenty four hours to set.

(7) Now cut away the centre section of the bottom wing. Cut away a portion slightly less in width than the fuselage. This will leave the bottom wings slightly

Continued on page 568



FE8—from page 566

oversize in overall span. You can then bring them down to their correct length by careful filing.

Paint At this stage the wings top and bottom should be painted and roundels added. When the paint is dry, carefully drill out the ten strut locating holes on the underside of the top wing. Add the eight control horns to the top and bottom surfaces of the wings.

Struts The two V centre section struts are made up from the 504K undercarriage V struts. I made myself a simple right angled set square depth gauge, from plastic card and by placing this under and against the rear face of the fuselage with the height of the rear V strut marked on it I was able to accurately cut and chamfer the rear V strut to size. Similarly the front V strut was trimmed down to size. The eight interplane struts (504K) were trimmed to size (refer to plan) and shape and stuck into position in locating holes in the undersurface of the top wing. Check for alignment.

Paint When set, paint struts.

Tailplane and Rudder Remove the fin and rudder from the DH4 fuselage and using the hinge line as a common datum line, you can fill it down to the new FE8 fin and rudder. A paper pattern is a useful guide to ensure you do not file away too much. Smooth down to final shape with flour paper and add tail-skid, made up from plastic card and sprue.

Paint At this stage paint the Red, White, and Blue rudder stripes. In a like manner shape the tailplanes (DH4) again using the hinge line as a common datum. Smooth to final shape with flour-paper. Locate and cement port and starboard tail planes into position on to rudder ensuring that they are at right angles. Set aside to set thoroughly. When dry, paint fin, tailplane and elevators and leave to dry.

Booms Make up from plastic rod, two sets of booms. Chamfering the rear ends of the booms, so that the tailplane will just slip through. Set aside to dry. Paint when *dry*.

Engine and Propellor Taking the 504K Rotary engine, remove all of the inlet tubes.

Paint Colour the whole engine with Airfix Gun-metal. When dry, using very fine stretched sprue, add a push rod from the middle of the front of the crank-case to the top of each cylinder. Push-rods should be silver-coloured.

Turning to the propellor (DH4) continue the hole already partially drilled so that you have a hole drilled completely through the propellor boss. Reduce the diameter, referring to the plan to check correct dimension. Slice off the retaining collar from the propellor pin (DH4) and insert the pin through the prop boss, so that it protrudes 1/32 inch at the rear of the propellor and cement and leave to dry.

Paint The airscrew should now be painted to represent dark laminated wood, when dry about a third of the length of each blade leading edge from the tip can be painted to represent the brass sheathing, which is apparent on a number of FE8 photographs. Prop boss should be painted Airfix Gun-metal, front and rear. When all paint is dry, prop shaft should be located and cemented into the locating hole in the engine.

Undercarriage This was made up using the (504K) axle and the V struts were made up from plastic rod. The Vs were cemented outboard of the collars on the axle and left to set. (These collars can be painted to represent the 'bungy' elastic used on the undercarriage.)

Main Assembly Carefully scrape the paint away from the four points on the fuselage where the interplane V struts locate. At the same time scrape paint away from sides of fuselage where bottom wings locate. Cement interplane V struts in position on fuselage and leave to set. When set, gently lower the top wing on to the V struts and carefully butt each bottom wing against fuselage. You can then mark on each bottom wing the exact strut location points. In this way you ensure that when assembled all struts will be perfectly vertical in front elevation and in line in the side elevation. Drill out the eight marked strut location on the bottom wings. Dry fit the top wings on to the V struts and butt the bottom wings to the fuselage, checking that top and bottom wings line up accurately in front elevation. Make any necessary adjustments by trimming the bottoms of the interplane struts with a modelling knife. When satisfied apply cement to the strut locating holes in top and bottom wings and to the two centre-section ends of the bottom wings. Lower the top wing into position on the V struts and then locate bottom wings into position against the fuselage sides, finally locating the struts into position in the locating holes in bottom wing: Check that alignment is correct (it should be if your dry fitting was done accurately). Set aside to dry completely for 24 hours.

Take up your tailplane/rudder assembly and carefully scrape away paint from boom locating points. Now cement the two booms into position at the rear of the two inboard rear interplane struts and allow to stand for five minutes or so. Then gently slide the tailplane/rudder assembly into position between the two open ends at the rear of booms, cement by running liquid cement on to the four locating points. Check alignment. Set the whole assembly aside to dry. Support where necessary. Do not be impatient, and give the assembly 24 hours' drying time; it's worth it!

Paint You can now turn your attention to the wheels (504K). Before painting score with a knife the wheel discs to represent spokes through the fabric covering. Paint the tyres and when dry paint wheel discs. The easy way to paint wheels is to impale them on a cocktail stick; this enables you to rotate the wheels whilst holding your brush still. With the assembly thoroughly set carefully scrape paint away from four locating points on bottom of fuselage and cement undercarriage into position. Do not stick wheels into position yet. I prefer to do this when all rigging is complete. We now come to the rigging. A lot of people fight shy of biplanes because they feel they do not have the necessary technique to rig their models neatly. The undermentioned method I find the easiest and also has the advantage of producing the best scale effect. You will require the following:

40 SWG Fuse Wire	A metal rule
Modelling knife	Dividers
Tweezers	Long darning needle
A smooth surface (Formica or Glass)	

Starting at the most inaccessible point first, measure the length between the location points with your dividers. Now take a length of wire and place beneath a metal ruler on the smooth surface, gently roll the wire backwards and forwards beneath the ruler and you will produce a perfectly straight piece of wire. Measure off your length with the dividers. Place between your tweezers and test dry fit into position.

For sticking in position I have, until recently used an adhesive called Pafra Cement, but unfortunately this is no longer on the market. However I have found that Polystyrene cement does the job just as well.

To place the wire in position, you merely deposit a small blob of cement at one location point with needle and with the tweezers, place one end of the wire into the cement. Place another blob of cement at the other location point, and then gently swing the wire into contact with the cement. Continue working round the model until complete. I in fact timed myself on the FE8 and completed all of the rigging in four hours: Two, two hour sessions, and I might add, with hardly an oath to disturb the household!

The model can now be completed by pushing the engine/prop assembly into position on rear of fuselage and by painting (gun-metal) and cementing the Lewis gun (DH4) into position on front of cockpit.

Add the two control horns below fuselage and finally cement wheels into position.

Check list of components:

DH4: Wings, tailplane, rudder, petrol tank, Lewis gun, propellor, pilot's seat, propellor retaining shaft (No 7).
Avro 504K: Engine, struts, wheels, V-struts (No 34 and No 33), axle.

Colour scheme

Humbrol RFC Green: Upper surfaces of wings, and tailplane, rudder, nacelle, axle.
Humbrol (114) BR Coach Stock Cream: Undersurfaces of wings, tailplane, and wheel discs.
Humbrol (115) BR Loco-Hauled Stock Lining: Struts, booms.
Roundels: Were taken from Micro-Decals RFC Sheet.
Numerals: Blick Dry Print.

Water tower—from page 551

after the model is in place on your layout) is made simply from 3/64 inch diameter wire bent at the upper end and with a wrapping of paper $\frac{1}{16}$ inch wide below the bend to represent the junction fitting (Fig 7). The water outlet is cut from $\frac{1}{8}$ inch balsa wood and rounded to simulate a short right angle bend pipe. The delivery tube is made from a piece of newspaper (from the margin where there is no printing) painted with watery black poster paint, then formed into a flattened tube and glued. The outlet pipe is painted black and fixed in position as on the plans, and the tube is glued to its lower end. Add a strip 1/32 inch by $\frac{1}{16}$ inch between the upright supports behind the delivery tube as in the plan, and the model is complete.

The colour scheme can be chosen to suit your own personal preferences. The original tank is painted red oxide, but I used cream and green to match my other railway structures.

This model would be particularly suitable for the beginner as it is easily and quickly constructed and could be used on any layout, large or small, where steam power is still in use. It is original in appearance and makes a change from the various kit-built water towers seen on many layouts.

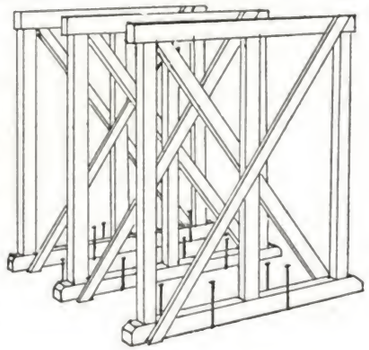


Fig 6: The three frames are held vertically by pins alongside each base. When aligned correctly the two diagonal braces at each end are added.

Books—from page 546

which deals with unusual markings or versions and a miscellany of various aspects of the famous fighter. There is some really excellent colour art and this all goes to make up a useful book for modellers and air enthusiasts alike.

The World's Helicopters.
Joan Bradbrooke.
Bodley Head, 9 Bow Street, London WC2.
£1.40.

ANOTHER title in the 'Putnam World Aeronautical Library' series, this is a good basic book on its subject, though not likely to appeal to the knowledgeable enthusiast. The series is intended for young enthusiasts and children and, seen in this light, it is a fine book which would make a good gift for the junior enthusiast. There are plenty of pictures and the subject is well explained.

Warplanes of the First World War: Fighters (Volume 4).
J. M. Bruce.
Macdonald & Co Ltd, 49 Poland Street, London W1.
£1.25.

THIS is the latest edition in the Macdonald pocket book series which is gradually covering all World War 1 aircraft in a similar style to the series on World War 2 aircraft which already exists. It is a splendid little book, covering many obscure but interesting types. Some idea of the extent of the work as a whole can be seen when it is realised this present volume runs only from B to G, so there seems to be some way to go yet before the series is complete. There are pictures, drawings, and text in the usual Macdonald style.

The Dragonflies.
£2.50.
Before the Storm.
£2.50.
Robert Jackson.
Arthur Barker Ltd, 5 Winsley Street, London W1.

THESE are two nicely written books which, while not revealing anything really new in the way of reference material, tell the stories they set out to tell in a competent and readable way. *The Dragonflies* tells the story of helicopters and autogiros, from the early pre-1900 notions, up to the first practical vertical take-off aircraft, right up to the latest designs. It is not a book of facts and figures but it is a very lucid and interesting history well worth reading for a good background of the subject. There are several pages of pictures. *Before the Storm* is a straightforward account of Bomber Command in the 1939-1942 period. Again, it does not cover anything not previously available, but it is an excellent and modestly priced record of the events and activities of the period. There are plenty of photographs, though most are well-known official shots.

Boeing: An Aircraft Album.
Kenneth Munson and Gordon Swanborough.
Ian Allen Ltd, Terminal House, Shepperton, Surrey.
£2.25.

LATEST in what is a growing series of popular 'histories' gives an excellent presentation of the Boeing story, aircraft by aircraft, from the very early Boeing seaplanes of 1916 up to the Jumbo and SST project. The pictures are big and well chosen and the text is concise and packed with facts. Specifications are brief, but for most types there is also a production record which included lists of serials.

Polish Aircraft, 1893-1939.
Jerzy B. Cynk.
£7.50.
United States Military Aircraft Since 1908.
Gordon Swanborough and Peter M. Bowers.
Putnam & Co Ltd, 9 Bow Street, London WC2.
£6.50.

PUTNAM'S fine range of aeronautical books forms the perfect reference library for those who want all the facts presented clearly and concisely, complete with scale drawings for all the principal types. The latest pair of volumes are even thicker and more luxurious than previous titles. To anyone outside Poland (or even inside Poland we imagine) some 95% of the book's material will be entirely new and it is a magnificent and absorbing record of what was once, before 1939, one of the leading air industries in the world, in technical progress if not in output. Both military and civil types are included in the single volume and its high price on paper works out very modestly in terms of facts per penny.

United States Aircraft is a new updated edition of the original 1963 book. It covers all types alphabetically so that there is a good mixture of familiar and little-known types. Minor types are dealt with in a couple of appendices, as are airships, while preliminary chapters deal with colour schemes, procurement, and brief air arm histories. As we've said of a number of previous Putnam volumes, if you can afford only one book on the subject of USAAF and USAF aircraft, this is the one to buy.

Fighter Tactics and Strategy, 1914-1970.
Edward H. Sims.
Cassell & Co Ltd, 35 Red Lion Square, London WC1.
£3.40.

THIS very readable volume covers virtually the whole story of air-fighting from the pilot's view. In the process the book takes in the exploits of most of the well-known air 'aces' and outlines their achievements and their contributions to the development of tactics and fighter deployment over the years. Some of the material in this book will be new to the average enthusiast and is well worth reading.

SHIPPING

Ocean Liners of the Past No 5: The French Line Quadruple-Screw Turbo-Electric Liner 'Normandie'.
Introduction and epilogue by Leslie Reade.
Patrick Stephens Ltd, 9 Ely Place, London EC1N 6SQ.
£6.20.

THIS book is the fifth volume in the excellent 'Ocean Liners of the Past' series. It follows the same format as its predecessors, consisting mainly of a facsimile reprint of a Souvenir Number of *The Shipbuilder and Marine Engine-Builder* published, in this instance, to celebrate the maiden voyage in 1935 of one of the most famous French liners of all time, the *French Line's* magnificent *Normandie*. Original copies of these Souvenir Numbers have been highly treasured collectors' items for some time and yet each book in this series offers even more than the original because, added to the text of the Souvenir Number is an illustrated epilogue which includes a useful chronological account of the working career of the vessel. There are over 230 pages and scores of pictures and drawings. There are eight gatefold plans of the ship.

ATTENTION ALL RAILWAY MODELLERS!

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By Norman Simmons

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(Block caps please) A/6/72

NEW KITS AND MODELS

Wiad: Harbour Craft

IN relative terms there has always been a shortage of model boats suitable for scenic use with the popular model railway and military scales. One or two plastic ship kits can be chopped up and adapted to waterline for the purpose, but there are limits to what can be done because most ship kits are of big vessels and the scale is too small or the period too early. Wiad, the German kit firm, has just brought out a very neat range of small river and harbour craft which have great possibilities and are very nicely designed. They have worked to 1:87 scale, matching the HO model railway size, but the models are also suitable for 00, 1:76 scale. Wiad have tailor-made the models for a typical model railway dockyard scene and the range consists of the following items: Tug as a kit (£1.15), Tug ready-assembled (£1.50), Ferry (prices as tug), Dumb Barge (72p kit, £1.15 made-up), Diesel Barge (84p kit, £1.50 made-up), Diesel Fuel Barge (£1.02 kit, £1.75 ready-made). All are in plastic, pre-coloured, and supplied in transparent boxes which double as display cases. Even in kit form assembly is very simple, the parts just snapping into place with minimal cementing. Windows and ports (where there are any) are not glazed, but clearly the wheelhouse windows would look good with a little clear glazing added by the purchaser. The models depict the smallest type of vessels in their respective categories. Detailing is well done but the modeller could really excel himself here, adding ropes, lifebuoys, stores, crewmen, and so on from the various model railway accessory ranges.

One or two points need amending. The Ferry, for instance, is just the Tug with an awning and guardrails. A couple of lifeboats are added atop the awning but with no other means of support, let alone any means of launching. Clearly these are best discarded and replaced with a larger boat slung under either davits or a derrick; as the boats themselves are tiny, they, too, could well be replaced. We reckon that by cutting down the funnels slightly and disguising the various doorways, these models could also be used for N gauge as larger versions of the same types. Structural variations, like deckhouses, extra masts, and so on, could also be carried out quite simply.

Wargamers should not overlook these little models—it takes only a moment's study to realise that the addition of a gun on the Tug or Ferry Boat would turn it into a fine little patrol boat or river gunboat. The Dumb Barge or the Diesel Barge would be ideal for miniature amphibious operations. The Wiad models are faintly Germanic in appearance and Rhine Barges of this same general type were used as equipment ferries—and earmarked for the invasion of Britain—by the Wehrmacht in the World War 2 period. We had three samples from the range, the Tug, Ferry, and Diesel Fuel Barge, our samples coming from BMW Models of Wimbledon, London SW19, who can supply by post, postage extra.

C.O.E.

AMT 1:25 scale Fruehauf Model FB Trailer

THIS model is one of a series currently on sale in the UK and is typical of a type of semi-trailer which is also becoming increasingly common on the roads of Britain. Owing to the large scale, the resulting model is over 19 inches long and makes an ideal companion for the AMT Ford LNT-8000 prime mover reviewed in the November issue. The complete outfit is an impressive 25½ inches in length and one would need an extremely tolerant wife or parent to be allowed to keep this model on the sideboard!

As with the Ford kit, the instruction leaflet is not too clear and needs to be studied very carefully together with the component parts to ensure that all go exactly where they are intended. Moulded in white plastic, the basis of the trailer is four large components, each 19 inches long and comprising (a) the floor (which has transverse supports moulded in place and the wooden flooring well represented by fine graining), (b) two sides with the corrugated light alloy construction nicely moulded, and (c) the roof. There is also a front panel with rounded corners and two opening rear doors. A plastic bag contains smaller suspension components and in addition a 'tree' of glittering 'chrome' components (wheels, air chambers, licence plate brackets, etc) is provided. A fair amount of flash is evident on the floor, sides and roof necessitating careful trimming. Some of the components of the suspension and front assembly suffer in the same way, as did those in the Ford kit in that moulding lines appear down the centre of flat surfaces, such as springs and girders and need to be carefully shaved away: a tedious and messy business. There are also one or two moulding faults which can be eliminated by judicious use of plastic putty.

Construction starts with the tandem axle suspension unit, the assembly of which needs care in order to ensure that everything is nicely square. On our example it was found that the lower radius rods did not lie parallel to the springs when their locating pips were fitted into the holes in the axle casings. This was easily cured by trimming off the pips and cementing the rods in the correct position. The suspension unit slides on to two girders which are cemented beneath the floor. Care should be taken when positioning the girders as their location is only indicated by two pairs of raised nubs on the lower cross members. The modeller is offered a choice of positions for the suspension unit which can be secured in place by a simple locking mechanism. The 'chrome' plated wheels are paired and mounted on steel axles which pass through the axle casings. Detachable rims are provided and these rims may be cemented in place (after scraping away the plated finish to ensure a good bond) and the tyres slipped on afterwards. The tyres (we had one spare in our kit) are moulded in resilient black plastic and have a most realistic tread pattern and fine detailing on the side-walls

As this kit is moulded 'in the white', every component will need to be painted and this is best done as assembly proceeds. The plastic, being shiny, should be given a matt undercoat first if one is to obviate white streaks showing through. Of course, with spray painting, this problem would probably not arise. We painted our underframe and suspension unit red and the floor was given a coat of Humbrol Track Colour No 119 which dries semi-matt and looks most 'wood' like. Sides, roof, front and doors were painted silver.

The front support dolly, which consists of two double-wheeled retractable legs, is used when the trailer is disconnected from its prime-mover, may be modelled with the legs extended for static display or retracted and 'ready to roll'. Alternative components are provided. A length of black vinyl tubing is also supplied—this is positioned beneath the trailer and represents the air hoses. The body sides are located by ten half-round stubs projecting from each side of the floor which fits into similarly shaped depressions in the body sides and the roof panel is retained in the correct position by long slots matching projections on the top edges of the body sides. With the front body panel cemented in place a rigid structure results. As previously stated, this model is fitted with opening rear doors, and in order that they operate efficiently, cement should be used sparingly during assembly, which is very simple. Red transparent plastic for use as tail-lamp lenses and reflectors on the body sides is also supplied. A large transfer sheet is provided and a template aids correct positioning.

Continued on page 572

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New Kits—continued

This AMT kit, whilst obviously not being so complex as the Ford tractor, needs to be painstakingly built and will cause the modeller to perhaps use a little more care and patience than may be called for when building a kit where each component simply slots into place. The result is a model of ample proportions and one which could easily be of competition standard. Our review sample was supplied by Riko, the importers, but the kit may be obtained from advertisers in this magazine at a price of £3.40.

L.A.M.

Above: *Heller Viking ship* Oseberg, *price £2.12, reviewed but not illustrated in the last issue.*

Revell: 1:72 scale 'Blue Angels'

REVELL have come up with the interesting idea of presenting four F-4 Phantoms of the celebrated US Navy 'Blue Angel' aerobatic team, all together in one box, complete with a display stand which holds all four models in a suitable aerobatic attitude. The mouldings appear to be the old Phantom, available already in single kits, but this time in a blue very close to the actual base colour of these machines. It seems slightly too light to us when compared with colour pictures. Most modellers will, however, wish to paint the models in any case. The important item in the kit is a fairly good transfer sheet which takes care of all the intricate flashes and lettering of the actual aircraft. If you don't personally want four similar Phantoms in one colour scheme, this kit would lend itself to group purchase where the contents could be shared between four modellers. Presentation and moulding is good and the instruction sheet gives good colour details, including all internal colours. Our sample came from Bridge Models of Walthamstow, who can supply all Revell kits by post. Price of this kit is £1.55. *C.O.E.*

Revell: 1:32 scale kits

WE missed out on the various Revell re-issues of their 1:32 scale kits in alternative schemes, but Bridge Models of Walthamstow, who stock all Revell items, have kindly filled the gap. We had from them the P-47D Thunderbolt, now in 'razorback' form and with RAF SEAC markings. This proves to be a most impressive model, better than the original 'bubble hood' version and with the razor-back feature well captured. We looked forward to the SEAC markings, but the codes provided proved to be the wrong colour, black instead of white or pale grey, so the modeller will need to find other letters for this. The tail and rudder shape on this model is a little out and needs slight modification. Next comes the P-51C, this time in RAF markings and with optional 'Malcolm' hood. This makes a nice feature but the kit is spoiled by having squadron codes in a curious shade of blue and a spinner which is far too sharp, a fault repeated from the original issue. The P-51C kit costs 95p.

Best of the bunch is the very fine Ju 87B kit, this time in Hungarian markings as portrayed in various books and Profiles in the past. This is well done and could well be your first choice if you are new to 1:32 scale. Priced at £1.15, it is an excellent buy. The same can be said of a recent new 1:32 scale offering from Revell, the Mitsubishi J2M3 Raiden. Compared with pictures, the model looks to be dead accurate and the moulding is superior to all previous Revell 1:32 scale offerings. It is a stubby, tough-looking aircraft, a shape not too familiar to British eyes. It makes a refreshing change from the inevitable Zero. Detailing is excellent—we note that it is moulded in Japan, unlike previous kits in the range—and again it would make an excellent buy for a newcomer wishing to sample the very nice 'feel' of big model aircraft. Price is £1.15, and Bridge Models can supply on mail order if you have no local stockists. *C.O.E.*

Heller: 1:8 scale BMW 75/5

AMONGST the 1972 releases from the French firm of Heller is the BMW 75 motor cycle. The prototype is a modern equivalent of the early ABC with its transverse horizontally opposed twin cylinder engine and shaft drive. This arrangement results in a neat compact power unit and is very popular, giving good accessibility for maintenance.

In view of the fact that the components of a motor-cycle are not hidden away behind body panels, any model of this type must display plenty of 'bits

and pieces'. The Heller kit does this very effectively; in fact apart from the internals of the engine, every piece of the prototype seems to be reproduced including the wiring and control cables.

There are a number of other satisfying details incorporated in the model such as separate rubbers on the footrests, bulb and reflector in the headlamp, separate fins on the cylinders, and so on. A slight departure from normal in kits with working suspension is that the springs have to be produced by the builder from the materials supplied. However, the instructions for this are quite clear. The parts, over 200 of them, are moulded in light grey, black and chromed plastic; they are cleanly detailed, free of flash and clearly numbered. The well-produced spoked wheels are shod with the correct treaded tyres.

Although the text of the instruction sheets is in French, there is a separate English translation. The sketches of the 29 construction stages are self explanatory and should present no difficulty to the careful builder. Colour instructions are included in each stage so one can paint where necessary in advance of assembly. Altogether this is a highly satisfactory replica of the BMW machine and should prove popular with all owners and motor cycle enthusiasts. Our sample came from Riko, the British Heller distributors. At a price of £3.99 this kit is excellent value. *B.L.*

Just Posters: wallcharts

A SERIES of large size colour wall charts covering subjects of interest to modellers is being distributed by Just Posters, 53 Perrysfield Road, Cheshunt, Herts. These are of the educational type in a format which will be familiar to most readers. The four samples we had covered motor racing, veteran cars, sailing ships, and aviation. The scheme is to take important events, machines, and personalities, presenting them in small coloured drawings complete with facts and details. Layout is neat and visually appealling. The colour printing and graphics are excellent. We thought the sailing ship chart had the edge over the others as it shows rigs, sail plans, and so on, in a most easy to read form. Price of each chart is £1.10, post paid. *C.O.E.*

Hales/ESCI: 1:72 scale transfers

HALES have now taken over the Italian-made transfer sheets formerly distributed by Riko, and we have received a whole batch of new releases for review. Since our early comment on the indifferent standard and inaccuracies in this range, these later offerings show quite an improvement in both size and printing quality. We were not able to check all of them for size but none looked to be over-scale or otherwise inaccurate. We were pleased to see that ESCI have provided markings for several kit types for which good alternatives were not previously readily available. The new sheets are as follows: 51—P-40 variants and Hellcat (mainly 'Flying Tigers' P-40C/N/K and personal markings for USN Hellcats): 52—Ju 52 (good options for the Airfix model): 53—Boston/Hudson/Ventura (a very nice sheet worth having, though the Ventura can only be obtained by converting a Hudson): 54—RAF roundels, small stencils, and victories, etc (again a good sheet, specially for the minute stencils): 55—Fw 189 and Bv 141 (excellent options for the Airfix models with spare unit markings as a good bonus): 56—Assorted US insignia, personal markings, and victories (very neatly done): 57—Stirling and Whitley: 58—Firefly and Swordfish (very useful this, and with some RAF squadron badges as a bonus): 59—Dakota (USAAF and British): 60—Catalina and Sunderland (includes attractive US Coast Guard markings): 61—Hampden and Anson (very good, with optional squadron badges): 62—German insignia, assorted: 63—Wellington (very good): 65—Axis volunteers (an Avia B-534, six Me 109Gs, and assorted other markings, and a Bulgarian PZL P-24): 67—Devastator

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and Seagull (a very colourful and attractive sheet).

All these sheets cost 15p each and are available by post from Jones Bros of Chiswick, postage extra. A catalogue is also available which illustrates every sheet in colour. This is handy for it means sheets can be checked for suitability prior to purchase. It is well produced and military modellers might like to know that it also illustrates a fine new range of military motor-cycles in 1:9 scale which ESCI are shortly to release. Hales will be importing these models later. We saw a prototype of kit No 1 in this range, a German BW R-75 combination, and it looks really fine. The catalogue costs 18p, post paid, from Jones Bros. *C.O.E.*

Above: *Czechoslovakian kit of the IL 10/Avia B33 reviewed but not illustrated in one of our recent issues.*

Frog: 1:72 scale He 111 and Corsair

AS we close for press we've received—but not assembled—two new Frog releases, a Heinkel He 111-H1, with optional markings and armament for the H6, and a Corsair F4U-1D. The He 111 differs from the Airfix version and depicts a Battle of Britain machine in its H1 form. It looks fine on a 'dry run' and the parts fit well together. The Corsair, at first sight, duplicates the other Corsairs available but this one wins by being really flush and smooth, just like the real thing, rather than peppered with rivets. It comes with imaginative markings too, for the RNZAF, or 1842 Sqn FAA in 1945. This appears to be a very accurate model. The He 111 costs 80p plus 15p postage, and the Corsair is 21p plus 5p postage. Jones Bros of Chiswick hold stocks and sent our samples. *C.O.E.*

Graham Farish: N Gauge Coaches

LATEST addition to the fast-growing Graham Farish range of N gauge items are a pair of British type 57 ft suburban coaches, all plastic and supplied ready-made at 93p each. There are two types, a full nine-compartment and a brake-end vehicle. They seem to be based on the pre-war type of LMS steel vehicle, but in this scale they are, perhaps, best regarded as 'typical'. Farish supply them in LMS red, SR green, and Brown, moulded in these basic colours. For the GWR then, the modeller will need to mask off the upper panels with Sellotape and paint these cream to complete the colour scheme. The underframes and bogies are moulded in black, the roofs in grey, and the interiors in light brown. The roofs come off so it would be possible to put miniature passengers inside. Glazing strips are included and the interior shows very nicely through the 'windows'. The makers supply strips of class number transfers for the doors and the models come in neat 'plush' type packaging. The standard N gauge coupler is fitted and the coaches should be snapped up by all N gauge modellers working with British type layouts. They are excellent value for money, sweet running and most realistic. Two brake-end vehicles look very good as a GWR 'B Set', ideal for a branch line layout. On one of our samples the roof showed a slight tendency to bow, but this could be obviated by cementing it down once passengers (if any) were installed inside. The brake-end vehicle has a full-length passenger seat interior which does not show from outside, but sticklers for realism will want to saw off the end few rows of seats to leave the luggage space clear. Jones Bros of Chiswick kindly supplied our samples and can supply all Farish models by post, postage extra. *C.O.E.*

Left: *The two new Graham Farish N gauge 57 foot coaches reviewed above.*

Heller: 1:100 scale LM

YET another model of the Apollo Lunar Module and Command capsule, this one is in 1:100 scale from the French company of Heller, sold in their 'Cadet' series. The Lunar Module (LM) consists of 49 parts moulded in dark grey plastic, no window transparencies being included. The mouldings in the review kit were sharp and virtually flash free, though, as might be expected, in so small

a scale, fine detail is sparse and smaller parts such as the landing gear, antennae and steering engines, look a little too heavy. The artwork on the box depicts the gold foil which covers the bottom half of the module, but this is not simulated on the actual kit.

The Command Capsule, consisting of 18 parts, has a removable top section, inside which may be seen the astronauts' couches and control panels. A stand depicting a lunar landscape on which to place the LM is included, with a pylon to show the Command Capsule passing overhead (albeit rather close to the surface!). Price is 22p and Heller kits are distributed in UK by Riko. Most big model shops stock Heller kits. At 1:100 scale this is a useful model for those who collect the growing numbers of aircraft kits to this same scale. *M.P.D.*

AIRCRAFT SCALE PLAN SERVICES

Aircraft Scale Plans Services, 36 Brice Road, Currie, Midlothian, offers a range of neatly executed 1:72 scale drawings priced at 10p each, or 15p for a sample sheet and a list of the full range. These are tinted and shaded as shown in our much-reduced reproduction. The only omission seems to be some sort of colour guide and identification of the unit depicted. Without this guide you'll need to find out elsewhere. The plans should be most useful for model builders and converters. Another sample we received portrayed the Bristol Brigand, for instance.

Humbrol: Maskol and Epoxy

LATEST addition to the Humbrol range of modelling aids is Maskol, which is produced specially as a paint barrier for masking out transparencies and other parts while a model is painted. The liquid is applied by brush (it is water soluble) and left to set. After this it can be overpainted with impunity and the whole lot is simply peeled off when all painting is completed. In effect it is the British version of the stuff known as 'Magic Masker'. Humbrol have also produced a Five-Minute Epoxy glue, resin and hardener in a twin pack which is mixed and applied to the areas being joined. It is specially good for joining materials which are normally non-compatible. Maskol costs 18p a bottle and the Epoxy is 40p per twin pack. *C.O.E.*

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Letters to the Editor

Aircraft identified

THE aircraft in photo No 7 of the April Photopage is a *Nieuport-Delage Ni-D.62* Sesquiplane Single-seat fighter, a type which entered service with the Armée de l'Air in 1929 and was still in service until about 1940. It was built in considerable numbers for those days, about 300 of all variants in France and 125 of the Ni-D.52 (almost identical externally) under licence by Hispana-Suiza in Spain. The Spanish built machines served on both sides in the Civil War. The machine in the photograph is probably the Ni-D.622, with full-span ailerons and Ratier metal airscrew, but the details are not clear enough—perhaps the original print is better.

The following information applies to the Ni-D.62 with a 500 hp Hispano-Suiza 12 Hb engine and 2-7.7 mm Vickers machine guns:

Span: 39 ft 4½ ins. *Length:* 24 ft 1¼ ins.
Height: 9 ft 10 ins.
Max Speeds: 168 mph at sea level, 154 mph at 16,400 ft.

F. J. A. Henderson, Woking, Surrey.

I ALSO believe that Photo No 4 has been wrongly identified. I believe it to be a Potez 63.11 and not a Bloch 174, both aircraft were similar in outline but the angular nose of a Potez is clearly visible in the photo and the cockpit cover of the Potez was much shorter than that of a Bloch. I have just completed a Heller model of the Potez 63.11 and I have a kit of the Bloch 174 which I have not yet commenced.

R. S. Crow, Braintree, Essex.

YOUR unknown aircraft is a Nieuport-Delage Ni-D.622 Sesquiplane fighter. Designed in 1931 and powered by a Hispanio-Suiza HS 12Mdsh inverted V-12 liquid cooled engine it had an armament of two 7.7 mm Vickers machine guns in the upper fuselage decking.

At the outbreak of the war the surviving Ni-D.622s together with the improved Planich-Szydlowski supercharged Ni-D.629 models were serving respectively with Escadrilles 1/561 and 111/10 at Villacoublay, who early in 1940 handed them on to Escadrilles Régionales.

Dimensions were: Span 39 ft 4½ in (12 m); Length 24 ft 7½ in (7.5 m); Height 9 ft 10 in (3.0 m); Speed 168 mph at sea level.

Camouflage was the standard Armée de l'Air green overall with engine cowling natural metal.

Paul Hunt, Walton-on-Thames, Surrey.

These are just a few of dozens of letters which readers send in to identify the aircraft in question. Many thanks to all others who wrote.—EDITOR.

Jeep Identified

THE 'JEEP' in your July 1971 issue, identified as an M51 in the November issue is, in fact, nothing but a very poor model of the World War 2 Willys/Ford model. An M51 was never produced. Perhaps Captain Rice meant the M151 but it does not look like an M151 and the curved-down bonnet he brings up as a point of identification goes with the M38A1 (Willys/Kaiser-Jeep). At any rate, the recoilless rifle version of the M151 was the M151A1C and both had a flat bonnet. If the USA registration number (20154304) is anything to go by it would be a 1942 Ford GPW. Perhaps this settles it?

John M. Carpenter, Olyslager Organisation, Dorking, Surrey.

CONTRIBUTIONS

Letters to the Editor selected for publication entitle the senders to each receive a free Airfix plastic construction kit, and the publication of photographs from readers is similarly rewarded. Airfix Products Ltd award the kits on the following scale:

ONE letter or photograph published is rewarded by any kit from Series 1-6 inclusive. For TWO letters or photographs any one kit up to and including Series 9 can be chosen, or alternatively two kits up to Series 6. For THREE separate contributions (eg, photographs) the entitlement is one kit up to Series 12 or three kits up to Series 6. Readers can make their choice on the special card which we send out after publication. The kits are supplied direct by Airfix Products Ltd.

We receive a large volume of mail from readers; all letters are read and we answer or acknowledge as many as possible provided that a SAE or stamp is included for reply. The Editor cannot accept responsibility for safe keeping of contributions though every care is taken. Opinions expressed by correspondents on this page are their own and do not necessarily reflect the views of the Editor or Airfix Products Ltd.

Metallic finish

THE following information should be of interest to readers.

Goldfinger Metallic Finishes are produced by John Rowney Ltd, in three colours, Gold, Copper and Silver, available from most art shops at 37½p per tube. Originally intended for picture frames, they give an excellent metallic finish to plastic models. The finish is in the form of a thick paste which can be applied with either a soft cloth or your finger. They dry to a satin finish which may be buffed with a soft cloth to a high gloss. The longer you polish the better the gloss. By varying the direction and amount of buffing you can produce different grains and textures.

For the best results some preparation is required. The model should be washed in detergent to remove any traces of grease, this should be standard procedure in any case, and on models of a dark plastic, an undercoat of silver paint should be applied (for silver finish) as there is a tendency for the Goldfinger to rub off the raised lines and rivets allowing the under colour to show through. The final results are well worth the trouble as you will have a really 'metal' model.

Goldfinger, lightly applied, can also be used to produce 'worn' finishes on camouflaged models by using an almost dry cloth to apply it to leading edges.

L. K. Hughes, Chester.

SUU details

WITH reference to the letter of N. D. Parry in the March 1971 issue in which he relates the construction of a SUU-23 gun pod, I wish to make the following observations.

The gun in the SUU-23 is not the M61A1, but the GAU-4/A, which is merely the M61A1 with a gas bleed-off system for providing power to run the gun system. The unaltered M61A1 is used in the SUU-16 gun pod, which requires a Ram Air Turbine (RAT) deployed into the airstream for power. As SUU-23s become available the SUU-16s are being withdrawn from service.

The overall colour of the SUU-23 is the same dark green used in camouflaging the F-4. However, colour match need not be perfect, as pods are not painted at the same time as are aircraft, nor by the same people, nor quite as often. Weathering therefore takes a hand. The duck-bill shaped flash shield above the gun barrels is natural aluminium, and is flat (matt) also.

The 'perforated cap', or blast diffuser, is flat black along with the rest of the gun, although weathered black is more accurate in scale. Periodically moving parts are brushed with oil, so a slight gloss over the gun housing is acceptable (assuming that the gun pod is built with access covers open or off).

Joseph P. Koss, Jr, Shalimar, Fla, USA.

Aerials

PERHAPS some readers might be interested in an alternative to the 'heated stretched sprue' for aerial detail. I find human hair to be quite effective. It has a long and honourable history in modelling and possesses qualities of fineness, strength and durability which are difficult to equal. It may be inserted in the tail while cementing fuselage halves together then tied around a suitably grooved radio mast. This saves unsightly cement blobs.

F. G. Martin, Edgbaston, Birmingham.

TAVR markings

READERS who model modern military equipment may be interested in the following points, regarding vehicles in some TAVR units.

In 5 (V) Battalion Royal Anglian Regiment some Landrovers carry a square plate on the radiator grille. This is painted blue and has on it in white the sub-unit to which the vehicle is allocated, eg, O.C. B COY, No 2 MORTAR, etc. The vehicles are in standard green with a red arm-of-service sign, with a white bar above bearing the legend '5 R ANGLIANS'. The higher formation sign is I believe, blue with a yellow crown.

Some vehicles attached to TA units bear a cab window sticker, announcing their unit, mainly for publicity purposes. An example is Bedford RL 44EL94 of 87 (Nottingham) Signal Sqn (Volunteers). This carried the Royal Signal sign on the offside whilst the nearside sign was, on Royal Signals colours, a red horseshoe, curved portion downwards, with a red XIII in the centre.

Could I also take this opportunity to state my agreement with W. G. Evans (Letters, March) on the use of one's own deductions in modelling, without waiting for specific reference matter to be published (the chances are they won't bring out what you want anyway).

T. J. Hudson, Aberystwyth.

Israeli Tanks

FOR THOSE interested in the Israeli forces the following details may be helpful when it comes to modelling the Centurion tank.

These vehicles were equipped with the 105 mm gun which can be taken from the Leopard kit. Some appear in photographs with searchlights mounted above the gun mantlet, measurements being about 8 mm in diameter and 2 mm wide. The Airfix mantlet can be adapted to the fixed type by covering it over with fine khaki cloth or Plasticine. A machine gun taken from the Buffalo kit is mounted beside the commander's cupola. The rear turret escape hatch is circular (6 mm) in diameter.

The Israeli M48 can be made from the Midori Patton kit in 1:76 scale.

The rear idler wheel near the drive sprocket must be removed. Stowage racks on the side and rear of the turret can be made from fine stretched sprue or fuse wire. The periscopes on either side of the turret need to be enlarged slightly and lifting hooks are mounted above the gun mantlet and on either side of the tank near the rear stowage racks which can be loaded with petrol cans and oddments made to look like packs, etc. Some Pattons are also equipped with searchlights.

Ian Clark, Upper Hutt, New Zealand.

Artillery records

MR. DYLE'S statement that 25 Field Regt has a unique claim in being the only Regiment to have used so many guns in so short a time is not correct.

I believe that 160 Field Regt in 26 Indian Division in World War 2 used 25 pdrs, 3.7 howitzers, 18 pdrs, 3 inch mortars, and Priests. Furthermore 4th Rhodesian Anti-Tank Battery (289 Batt Royal Artillery) was issued with 2 pdrs, then 6 pdrs, and, transferring to 6th South African Armoured Division, after Alamein, was issued with 17 pdrs just before Cassino. Subsequently the regiment used 4.2 inch mortars and M10 SP guns, and may have ended up as a Field Regiment using 25 pdrs.

I believe the Third Infantry Battalion of 28 Brigade was 1st South Staffordshires, and there was also 3 RTR and 3rd RM Commando Brigade.

J. J. Rainbow, Dover, Kent.

Crusader details

AS THE controversy over the Airfix Crusader still rages in your excellent magazine, may I hope to clear the matter up for once and for all?

I recently visited the RAC Tank Museum at Bovington and measured the Crusader there and the following are the dimensions: Length (from front mudguard to rear mudguard extremities) 19 ft 1 inch. Width is 8 ft 6 inches. Height I did not measure as the vehicle is 30 years old and would have possibly sunk on its suspension having no jacks under it, also the height would vary according to whether the crew were in or if fuel and stores were also stowed. The wheels were 31 inches in diameter.

Above: *Hinchliffe 105 mm Howitzer and World War 2 figures, all part of a new range designed to cover the main combatants of this war in the popular 'wargame' scale of 20 mm.*

All this means that the Airfix kit is correct in width and the wheels are as near as makes no difference, but as stated the length is not one but over TWO scale feet too long. The kit matches the plan by K. Jones in the September 1968 issue. Part of the fault of this plan is the possibility of all the published dimensions saying that the length of the Crusader is 19 ft 8 inches, and I feel this has come about because the length *is* 19 ft 8 inches *including* the extra fuel tanks these AFVs carried.

Eric Clark, Southport, Lancs.

Useful materials

APART from being a keen modeller my main pastime is angling, and during the last few months I have been attending night classes learning to tie my own trout flies. Amongst the large range of materials we used I noticed several that I consider might be of use to other modellers:

1. Individual fibres from Golden Pheasant 'Tippet' feathers. The ends of these would make ideal arrows for medieval or western warfare. These feathers can be bought in packets of 20.
2. Lurex. This is the trade name for a flat plastic/metal strip, about 1:64 inches wide supplied in 75 yards reel, and in a variety of colours including gold and silver. It would be ideal for decorating uniforms, model cars (radiator grilles etc) in fact anywhere that calls for thin lines of colour. Although not self-adhesive it can be stuck with Evo-Stick or Cow Gum. Lurex can be bought from most good haberdashery counters, or Singer Sewing Machine Shops.
3. The tying silk used is much finer than any thread that could be 'borrowed' from a sewing box. Ideally it should be waxed first by pulling it over a small block of beeswax or a candle. Ask for Pearsall's Gossamer Tying Silk. It comes in 20 different shades, including a useful Silver/Grey that I use for rigging bi-planes and aerial wires.

All the above items should be available at any good fishing tackle shop catering for the trout angler, or by sending away for the catalogues of either E. Veniard (Retail) Ltd, 138 Northwood Rd, Thornton Heath, Croydon CR4 8YG (at 30p refunded with first order), or Tom C. Saville Ltd, Beeston, Notts NG9 2AL. (at 15p). There are many others, but I can recommend the two mentioned. Individually none of these items should cost more than 30p.

A. J. P. Bonner, Dronfield, Sheffield.

Fallschirmjäger points

I WOULD like to make some comments on the 'Fallschirmjäger' article in the February issue of *Airfix Magazine*.

Firstly, concerning the Waffen-SS Paratroopers, it is doubtful if SS decals were ever worn on the 'Fallschirmjägerhelm', since the Waffen-SS paras were formed after orders banning the use of the decals were issued: see *Uniforms, Organisation and History of the Waffen-SS, Vol.* 1, pp 13. Also, while it is possible Luftwaffe camouflage helmet covers were worn, the Standard Waffen-SS cover also easily fits the Paratrooper's helmet, and there's no reason to believe they weren't issued to the SS Paratroops too.

The Panzerschreck was not a recoilless rifle—it was, exactly like the US Bazooka, a smooth-bore tube firing a spin-stabilized, shaped charge, rocket projectile.

The blast must have been great, because firers of the Panzerschreck without shields, were ordered to wear gas masks (without canister), plus hoods and heavy gloves, therefore the Tamiya figure pictured is asking to be a casualty. He is firing the weapon with the tube pointing to the rear over his legs; in real life, such an action would result in severe burns.

Incidentally, an excellent photographic history of the Panzerfaust Panzerschreck and other German tank-killer weapons is available in numbers 3 and 4 of the German-language publication *Waffen Revue*. Text may give English speakers trouble, but the photos (mostly from German Ordnance manuals) are pretty self-explanatory and detailed (sights, firing mechanisms, action, and even the packing cases are to be seen). The books are well worth the cost of 6 DM (about 75p) plus postage. Books are available direct from the publisher:

Karl R. Pawlas,
Publizistisches Archiv fur Militar—
und Waffenwesen
85 Nürnberg, Krelingstrasse 33
W. Germany.

Patrick M. Barrett, Gräfelfring, West Germany.

R. C. Gibson writes: *With reference to Waffen-SS helmet decals, the order concerned units in the field—the SS paras were only in full-time field service for a short period at the end of the war. As Mr Barrett is no doubt well aware, an order was also issued forbidding the wearing of collar patch and shoulder strap insignia on camouflage clothing but that both this order, and the subsequent orders of February* 1943 *and July* 1944 *which made the wearing of insignia on camouflage clothing compulsory were not fully acknowledged in the field. I think this establishes the reality of the situation regarding such orders. The SS Paras did wear Luftwaffe-pattern helmet cover: they may have worn SS-pattern helmet covers.*

The Panzerfaust was a recoilless rifle. The actual figure mentioned has a 20 *degree angle between the weapon and the right leg. None the less, Mr Barrett's data on the actual clothing used is valuable: this is for the RPzB* 43 *without the moveable shield.*

Model Soldiers—from 565

but until that time arrives he need not be prevented from producing acceptable models by any lack of the more traditional modelling skills.

I have discussed this subject here because I am sure that the less restriction an enthusiast applies to his choice of materials and techniques, the more scope there will be for the exercise of his creative imagination.

As a modelling project, try converting some of the new American Civil War infantry, issued by Britains Ltd in their 'Deetail' series, into British infantry of the Indian Mutiny period 1857-8, or of the Zulu War 1879. The drawings show the sort of work required, which mainly involves changing or adaptation of heads, and minor alterations to clothing and equipment. Only a little effort and some repainting will produce original and authentic types representative of periods which have been largely neglected by commercial model manufacturers.

Both infantry and cavalry are represented among the Britains American Civil War subjects, with some lively, well-sculpted horse models, which in themselves provide excellent material for alteration and adaptation. There are also mounted and dismounted cowboys, some of which can readily be changed into Boers or various irregular units, and Red Indians horsed and on foot giving even more scope to the imaginative converter. World War 2 is represented by German and US Infantry in a number of action positions which lend themselves to adaptation with little effort. For the present time this completes the available 'Deetail' ranges, but no doubt there will be more to follow. Robert Gibson included some 'Deetail' German conversions in his recent German paratroop series.

These figures fall into the general category of 'flexible' plastics, but are made from PVC, unlike most other currently produced toy soldiers which are manufactured from Polythene. This means that parts can be bonded together with a PVC adhesive, such as that marketed by Humbrol, and that careful filing or sanding can be carried out without causing the unmanageable fibres so characteristic of polythene if operated upon in this way. However, PVC models do suffer from a fault common to all flexible plastic pieces, in that thin sections such as rifles, swords, pistols, etc, tend to warp badly, and in general need to be replaced by metal or hard plastic items if a satisfactory and lasting appearance is to be achieved.

Prices of 'Deetail' figures are quite modest; they are readily obtainable in most areas of the UK, US and Western Europe, and are well-proportioned and sculpted, making them particularly suitable for the newcomer to conversion. Many of the figures also have removable 'plug' arms which can be swapped around

Above and right: *Two conversions from the Britains American Civil War soldiers. These are quite simple, only entailing changing the heads for Rose metal ones, substituting the correct rifle and slings and a small amount of trimming. Both figures are shown undercoated with Unibond ready for painting, standing alongside them are the original figures to illustrate the amount of work needed to obtain this result.*

to provide variety with a minimum of effort.

The American Civil War infantrymen are especially suitable for conversion to British Army types of the latter half of the nineteenth century, since the loose tunic and trousers are typical of British active service dress during this period, and the equipment can be altered quite simply. My sketches and adjacent notes show how the standard-bearer model can be converted very easily to represent a British officer of the Indian Mutiny, or of the Zulu War periods; let us now deal with the other ranks.

During the Mutiny of 1857, British soldiers campaigned in a great variety of dress from the white cotton drill 'hot-weather' uniforms to an improvised shirt-sleeve order featuring the blue-grey Army shirt and dark blue serge trousers. Loose khaki-drill tunics and trousers were also very popular, whilst head-dresses of the 'pork-pie', pill-box, and kepi varieties, often with cloth covers and neck guards rather like the French Foreign Legion wore, vied with full dress shakos, bonnets, and primitive solar topees. Contemporary records and sketches indicate that the men's uniforms suffered considerable wear and tear during the campaign and, since supply and replacement were somewhat chancy, repairs were made with whatever materials happened to be available, resulting in some really bizarre effects.

More than twenty years later, in 1879, the regular line-infantryman fighting in the Zulu War was dressed in red tunic and dark-blue trousers, with black boots and short gaiters, and with his head protected from the fierce African sun by a cork helmet. Here again the country and climate took their toll on uniforms and equipment, causing troops in the field to present rather a battered appearance.

All this allows the creative modeller a great deal of scope to exercise his imagination.

Conversion 1

This depicts a British soldier during the Indian Mutiny 1857. It requires the Britains 'Deetail' American Civil War man loading.

Carefully remove the figure from its metal base and cut, file, or sand off all mould marks, flash, or other excrescences. Trim off the cap peak, and flatten the top to form a 'pork-pie' shape as in Fig 1. Then fit a piece of stout notepaper around the back of the cap as a neck guard, the lower edge should be about level with the shoulders. If it is desired to alter the head position this should be done before fitting the neck guard by removing the head and cementing it facing in the required direction. Next cut the large ammunition pouch from the rear of the belt, ensuring that it is damaged as little as possible in the process, and set it on one side. Make a small pouch from scrap material and fit it to the shoulder belts where they cross on the soldier's chest (Fig 2). The percussion musket/rifle moulded to the figure is quite correct for this period but a sling made from stout paper, or ribbon, should be attached as shown in Fig 3. In fact the ammunition pouch carried by British infantry at this time was fixed to the right-hand side of the belt in front, and would be concealed on this figure by the left hand and rifle-barrel. Make sure all operations have been carried out, smooth off any excess adhesive, etc, replace the figure on its stand, and coat it overall with Unibond before undercoating and painting.

Conversion 2

This is for a British infantryman in the Zulu War 1879, and requires the 'Deetail' American Civil War soldier advancing, and a Rose Models metal head with Wolseley helmet. (This is a recent re-issue by the company, together with a Colonial pattern helmet.)

Take the figure off its base and clean off any mould marks, then remove the head and drill out the neck to receive the spigot of the metal head. The right arm holding the rifle can be slipped out of the shoulder socket at this stage and set on one side for the moment. Carefully cut the ammunition pouch from the back of the belt and re-attach it to the left side of the belt in front, with the pouch removed from the figure in Conversion 1 fitted to the right side of the belt (Fig 4), with a smaller pouch made from scrap below it. Shape the water-bottle on the right hip to represent the Oliver type, also shown in Fig 4. The trousers are now shaped at the lower legs to form gaiters; be sure that you don't overthin the ankles in this operation. Take the metal head and fit it into place in the neck hole, having first filed off the folded scarf or pugaree round the helmet. Replace the rifle in the right arm with a metal or hard plastic type, the arm carried in the Zulu War being the Martini-Henry, then re-attach the arm to the figure and add a sling as in Conversion 1. Having made good all joins, and fitted the figure back on to its base, it is then ready for undercoating and painting.

Both these conversions are of a type which can be managed successfully even by newcomers to military modelling, with a minimum of expense and effort, yet

Fig 1
Pork pie cap with neck cover, Indian 1857

Fig 2
Cotton drill tunic. Note small pouch where straps cross on chest.

Fig 3
Enfield Rifle 1857 showing attachment of sling.

Fig 4
Scarlet frock 1879 showing collar and cuff-patches with white 'crows foot' piping. Note arrangement of pouches and water-bottle.

they result in original and out of the ordinary pieces.

In addition to re-issuing the helmeted heads mentioned above Rose Models can supply a great variety of heads, weapons, equipment, etc, in their range of accessories. Other firms who supply accessories are, of course, Historex Agents, Greenwood and Ball Ltd, and in the US HR Products of Morton Grove, Illinois. With the exception of Historex Agents, all these firms can supply a Martini-Henry rifle to 54 mm scale. Addresses are as follows, but please remember when making enquiries always to include a stamped and addressed envelope for the reply:

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Readers in the United States who may find it difficult to obtain Unibond adhesive for coating flexible plastic figures may be interested to know that a reasonable substitute for this material is Elmer's Glue-All, a white glue readily obtainable in the States. I am indebted for this information to Dr Edward K. Poole, 2410 Rio Grande, Austin, Texas, USA, to whom I send my appreciation and thanks.

COLOUR DETAILS

Conversion 1
Head-dress cover: White.
Tunic: White or khaki drill.
Trousers: White or khaki drill.
Belts: Buff.
Water-bottle: Blue-grey.
Pouch: White.
Boots: Black.
Rifle sling: White.
Haversack: White.
NB: All white items quickly became dirtied and discoloured.

Conversion 2
Helmet: Buff or pale brown 'tea-stained'.
Tunic: Red with collar and cuff patches of facing colours.
Trousers: Dark-blue with red stripe down seams.
Belts and Pouches: Buff.
Boots and Gaiters: Black.
Water-bottle: Natural wood.
Haversack: Off-white.

Leopard ARV—from page 545

piece of medium 'wet and dry' abrasive paper rub a sloping flat surface along the needle, starting at the arrow and ending up with the needle semi-circular at the tip. Shape and drill the other end of needle as drawn. Pass the jib steadier up into the jib, flat side up, and fix other end between F and G with pivot pin.

Complete section 2 of the Airfix Leopard—the suspension section. Remove the pivot pins in the jib and jib steadier, also the pivot pins in dozer blade assembly for painting these parts. When dry, clean out all the drilled holes, then re-assemble dozer blade, jib and jib steadier. Pass the pivot pin through the dozer arms and with the dozer ram laying on top of the pivot pin, glue this pivot pin $\frac{1}{8}$ inch up the inside of the sloping front. The dozer blade should pivot from the vertical to near horizontal. Now, remember part A of the crane assembly. Find it, for you can now use it to fix the crane to the body of the ARV. Place the crane in position with part B protruding through the $\frac{1}{16}$ inch hole. Now glue part A to part B and, when dry, crane should turn.

Now glue the new top to the Leopard body, add the radiators and the extra sloping front, and complete the painting.

The problems of joining tracks seem to have come to an end with some cement, called 'Weldtite', sold in some chain stores. A spot of 'Weldtite' on both overlapping ends is needed, after which the tracks are clamped together overnight with bulldog clips. Finally, fix the machine gun on to main roof hatch, paint dark grey-green and apply transfers.

Above: *Detail shot of the ARV showing new hatches and fittings made from plastic card.*

This completes a neat model which, though more complex than many, makes a fine addition to a collection.

Last month I forgot to mention that the guns on the AA tank came from old Panther barrels left over from a previous conversion.

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"Adlerangriff", the German 'attack of the Eagles'. Planned date Tuesday, August 13th 1940. Intention: to crush once and for all the vastly outnumbered Royal Air Force and so 'soften up' Britain for 'Operation Sea Lion', Hitler's planned invasion of England. The invasion that never was.

Up to this time Göring's much vaunted Luftwaffe had had an easy time of it. In Poland and in France, most of the outnumbered aircraft had been destroyed on the ground before the Blitzkreig attack on the cities began. The British army had lost all its heavy equipment at Dunkirk, and the R.A.F. had lost more planes – and more pilots – than the country could afford.

So, on August 13th, with the codeword Adler Tag – 'Eagle Day' – the German attack was launched. At dawn, 84 Dorniers took the air under command of Oberst Johannes Fink. Yet in sight of the English coastline, over Cap Blanc Nez, just South of Calais, the Dorniers – promised clear skies – were met by rising banks of cloud. When the escorting Messerschmitt Bf 110 of fighter group commander Joachim Huth finally appeared, it dived repeatedly past the nose of Fink's Dornier. Fink took this as telling him that the fighters were with him. But this was not the case. The fighter escort was, in fact, returning. *The Eagle Day attack had been postponed until 2 p.m.* So the Dorniers, one key radio out of action, kept on, heading for Eastchurch airfield and Sheerness, Kent.

The British too had their problems. Because of a surprise raid on the previous day by Bf 110 long-range fighters unexpectedly fitted with bombs, Ventnor radar on the Isle of Wight was out of action for weeks and radar installations were damaged at Dover, Rye and Pevensey.

On this occasion little warning was given, and aircraft were still lined wingtip to wingtip on the ground at Eastchurch when Fink's Dorniers arrived. The attack was on. Spitfires of the R.A.F.'s 74 Squadron, Hornchurch, fell on the massed – and unescorted – Dorniers from the rear, but the leaders escaped, and their bombs rained on Eastchurch airfield, smashing the operations block, killing and wounding nearly 40 personnel and writing off five grounded Blenheims. Yet the field was operational again within hours as a result of superhuman effort.

The real 'attack of the Eagles' began in the afternoon, as the Luftflotte groups 2 and 3 arrived over England between 3.45 and 5 p.m., aimed towards Portland, Southampton, Kent and the Thames Estuary. Forewarned by the earlier false start, 11 Group of Fighter Command was ready to meet the threat.

The great battle was joined in the skies over Southern England. 13 Spitfires saw a formation of Junkers 87b bombers below them and dived on them out of the sun, breaking up the escorting Bf 109 fighters and sending at least one down in flames. Score 1 for the R.A.F. Attacked by the Spitfires of 609 Squadron, nine Stukas were destroyed in minutes. The remainder missed their target, the airfield at Middle Wallop, and did little damage to Andover airfield, not a key target.

During this long-awaited Eagle Day the Luftwaffe flew 1,485 sorties – their most active day ever to that date. R.A.F. losses in the air were 13 fighters against 45 German aircraft brought down. Two of Britain's airfields were damaged, but one supposed fighter station turned out in fact to be a Coastal Command air station, 'a major error by German reconnaissance'. The main aim of Eagle Day – to crush Britain's fighter strength – was not achieved.

Yet Eagle Day was decisive. It is possible that the R.A.F.'s victory on this day set the pattern for the remaining days of the Battle of Britain. In this battle, the Nazi Eagle had its wings clipped.

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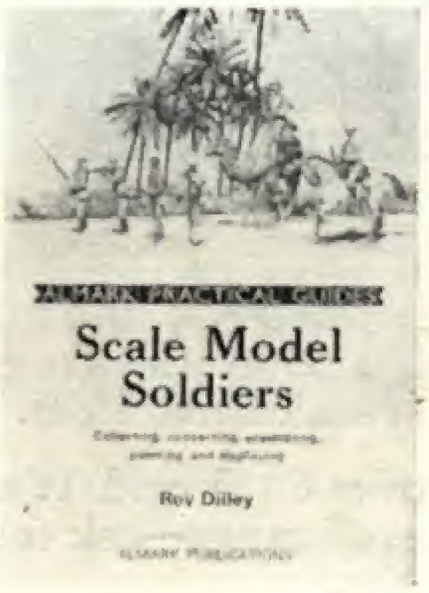

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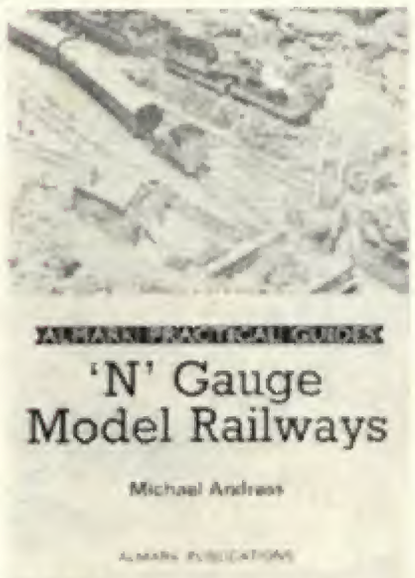

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